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ORIGINAL ARTICLES

IS ICHTHYOL USELESS?

The Result of a Questionnaire Answered by 169 Dermatologists

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Ichthyol is now omitted from the New and Nonofficial Remedies by a comparatively recent ruling of the Council on Pharmacy and Chemistry of the American Medical Association. The summary of the reasons on which the Council bases their ruling is as follows:

1. Ichthyol, by virtue of its chemical properties, belongs to a class of substances derived from petroleum-like products found in various parts of the world.
2. Ichthyol has no reducing power.
3. Ichthyol does not precipitate the protein of the body cells.
4. Ichthyol is at best of feebly antiseptic action.
5. Ichythol was recommended for numerous diseases because of a mistaken view of its action, and there is no satisfactory evidence that it has any therapeutic properties other than those of a feeble antiseptic, demulcent, and feeble astringent. A careful study of the literature revealed the fact that there is no satisfactory evidence that ichthyol has any therapeutic value other than that of a mild antiseptic and that of being soothing to inflamed mucous membranes.
6. It is seldom used except in combination with other agents, and even its warmest advocates are in total disagreement concerning its application.
7. Clinicians often state that they employ it in conditions in which they are unable to determine its value and without being at all convinced that it is responsible for any improvement that follows its use.

That such a ruling was made, and for such reasons, was a very great surprise to me because I have used ichthyol effectively in a large number of skin conditions for a number of years. Ichthyol and its derivatives have maintained their place on the formulary of the Skin Department of the Massachusetts General Hospital for over a generation and are prescribed daily with satisfaction and success by a majority of the members of the staff.

Interested because the report of such conservative observers as the members of the Council on Pharmacy and Chemistry should be so strikingly adverse, I have taken considerable pains to ask a number of dermatologists from various parts of the country what their experiences have been. I quickly found that opinions varied tremendously upon the comparatively simple point of the clinical effectiveness of this remedy. There was such divergence of opinion that I thought it worth while to get an expression of opinion from the dermatologists of the country as a whole on this matter. Accordingly, a questionnaire was sent out to all of the members of the various dermatological societies and to other members of the American Medical Association who were denoted by "D" as limiting their practice to dermatology.

In passing I wish to state that I am not connected either in fact or in spirit with any pharmaceutical house manufacturing ichthyol or its derivatives nor do I intend to initiate a campaign for the inclusion of ichthyol in the New and Nonofficial Remedies because of the favorable outcome of the voting on this question.

Three hundred questionnaires were sent out and 169 were answered. The country was roughly divided into four areas and of 169 replies, 76 came from the East; 56 from the Middle West, centering about Chicago; 22 from the Far West; and 15 from the Southern portion of the United States. The results of the voting on the various questions follow:

Do you use ichthyol now?

	Yes	No	Not voting
East	61	15	0
Middle West	45	11	0
West	18	4	0
South	10	5	0
	134	35	0

From the figures in this table it will be seen that 80% of the men that replied are using ichthyol today in a varying degree in their dermatological work.

Has the banning of ichthyol by the Council on Pharmacy and Chemistry influenced you to stop it?

	Yes	No	Not voting
East	0	76	0
Middle West	1	54	1
West	0	21	1
South	0	15	0
	1	166	2

Apparently the only conclusion that can be reached from the answers to this question is that the dermatologists overwhelmingly prefer to use their materia medica in accordance with their own experience rather than according to the recommendations of the Council on Pharmacy and Chemistry. One man noted, rather half-heartedly, that he had been influenced by the action of the Council. Two preferred not to vote and 166 (99%) recorded an unqualified denial of the influence of the decision of the Council.

Under the terms "excellent," "good," "fair," "no good," and "no experience," will you designate what your experience has been with the use of ichthyol in the following diseases:

ERYSIPELAS

	Excellent	Good	Fair	No good	No experience
East	23	18	9	18	8
Middle West	7	16	5	19	9
West	1	8	6	5	2
South	3	3	3	4	2
	34	45	23	46	21

In this disease the highest number, which was 102 (60%), had had a fair to excellent success; 46 (27%) recorded the use of ichthyol as of no benefit; and 21 (12%) had had no experience in its use in this disease.

LYMPHANGITIS

	Excellent	Good	Fair	No good	No experience
East	7	23	6	16	24
Middle West	5	14	6	10	21
West	0	4	3	4	11
South	1	3	4	4	3
	13	44	19	34	59

In this disease 76 (45%) had had a favorable experience, ranging from fair to excellent; 34 (20%) rated it of no use; and the comparatively large number of 59 (35%) had had no experience with this drug in this condition.

CELLULITIS

	Excellent	Good	Fair	No good	No experience
East	9	25	11	15	16
Middle West	6	13	6	13	18
West	2	7	2	3	8
South	1	4	2	6	2
	18	49	21	37	44

Cellulitis stands third with 88 (52%) who were favorably impressed; 37 (22%) are recorded as distinctly against its use; and 44 (36%) have had no experience.

FURUNCULOSIS

	Excellent	Good	Fair	No good	No experience
East	7	23	16	18	12
Middle West	3	13	10	13	17
West	0	6	2	4	10
South	4	2	5	3	1
	14	44	33	38	40

That ichthyol is of use in furunculosis was demonstrated by the figures which show that condition to be the second most common disease in which it was employed; 91 (54%) found it useful; 38 (22%) believed it to be of no use; and 40 (24%) had never tried it.

ERYTHEMA NODOSUM

	Excellent	Good	Fair	No good	No experience
East	6	18	10	15	27
Middle West	1	9	9	11	26
West	2	2	4	2	12
South	0	3	0	6	6
	9	32	23	34	71

In this more uncommon trouble a distinctly smaller number found it of benefit; 64 (38%) were recorded in its favor, while 34 (20%) found it to be no good, and the large number of 71 (42%) had had no experience.

ERYTHEMA INDURATUM

	Excellent	Good	Fair	No good	No experience
East	1	14	10	16	35
Middle West	1	6	11	13	25
West	0	1	1	2	18
South	0	2	0	7	6
	2	23	22	38	84

In this table the small number of 47 (28%) were recorded as finding it of use; 38 (22%) found it of no avail, and practically one-half of the men, 84 (50%), had never tried it. In this disease only two men found its benefits "excellent," which was the smallest number recorded under this designation for any of the diseases.

HERPES ZOSTER

	Excellent	Good	Fair	No good	No experience
East	6	10	2	15	43
Middle West	0	7	2	16	31
West	1	1	2	4	14
South	1	2	2	5	5
	8	20	8	40	93

In this disease the largest number in the series had had no experience in its use, which was 93 (54%); 40 (24%) found it of no use; and only 36 (21%) found it beneficial.

ADENITIS

	Excellent	Good	Fair	No good	No experience
East	3	19	12	18	24
Middle West	0	13	4	15	24
West	0	6	4	4	8
South	2	1	3	6	3
	5	39	23	43	59

In this condition 67 (39%) were recorded as being favorably impressed by its effect; 43 (25%) were distinctly unfavorable; and 59 (35%), had had no experience.

What has been your experience with ichthyol in other skin diseases?

Under this heading a great many men recorded their impression of ichthyol in conditions other than the eight in which my own experience had been the greatest. In eczema 22 found it useful; in acute dermatitis 21; in acne rosacea 13; for internal use 8; in staphylococcus infection 8; in seborrhoic conditions 5; in acne vulgaris 4; in eczema marginatum 4; in lupus erythematosus 3; in psoriasis 3; in ulcer dermatitis 2; in echthyma 1; in dermatitis herpetiformis 1; in paronychia 1; in erysipeloid 1; in lichen planus 1; in sycosis vulgaris 1; in pruritus vulvae 1; in pruritus ani 1.

Under this heading a great many men also took occasion to record their personal opinions and experiences, and their comments were so varied and so often diametrically opposed that the following excerpts are given as typical. Some of the favorable comments are as follows:

"I use ichthyol internally with very good results. I use it in patients who are habitually constipated, who show an indicanuria, especially in cases of acne vulgaris, and find that results are excellent. I think ichthyol should be included in the New and Nonofficial Remedies."

"I visit, every summer, the Hospital St. Louis, in Paris, where ichthyol is very extensively used."

"We use ichthyol in Lassar's paste in small percentages (1 to 5%) as a mildly stimulating, drying ointment. We also use it in petrolatum with sulphur in small amounts, in acne rosacea, etc. We do not use the drug extensively. In the hands of the general practitioner we think, as a rule, its efficacy has been greatly overrated. We believe its use in selected cases is of value."

"I find it very useful in fresh radium or X-ray burns, especially if they become infected from knocking crusts off, etc. Its main usefulness comes in streptococcal infections of the milder and superficial type. In certain of the pyodermias and especially in one of the types of impetigo contagiosa I find nothing equal to it."

"I have found ichthyol particularly useful in mildly inflammatory types of dermatitis such as varicose dermatitis of the legs with sharply outlined, slowly spreading border and superficial pustules. I intend to continue its use."

"Ichthyol mixed with unguentum Diachylon (Hebra) gives a beneficial application in leg ulcers, especially when infected.

Ichthyol	ʒ i
Ung. Diachyl Hebrae	℥ i

"Same application after the treatment of epithelioma covers the sore, keeps it clean and sterile. In cases of dermatitis from ivy poison and eczema I have found ichthyol beneficial in form of liniment.

Ichthyol	ʒ ii
Olei amygd dulci	
Aq. Calcis	aa ℥ ii M

"Diminishes the itching sensation, giving rest to the patient; cornifies the epithelial cells, covering raw excoriations."

"I have used ichthyol for many years in the treatment of seborrhoic conditions, in the treatment of poison ivy in the form of compresses, aqueous solution 1 to 5%. I have used it as a local antiphylogistic in this manner for many other acute dermatoses of the dermatitis venenata type. I have found it useful also in certain types of lupus erythematosus, acne rosacea and even in acne vulgaris. I have also used it for many other conditions both in lotion and ointment form and I do believe that it has some of the decongestive action that we were taught to believe it had. I should be very sorry to be compelled to discontinue the use of ichthyol or thigenoil, because I think it has many indications. Professor J. Schaffer, in his Therapie der Haut und Venerischen Krankheiten, recommends it very highly for several dermatoses, and I also believe that several other American and European authorities likewise recommend it."

"I would regret very much to have to give up the use of ichthyol, as I have had many very good results from its use during the past twenty-one years, seventeen years in general practice and four years in dermatology. Doctor, you put me down for the use of ichthyol."

"I do not believe that the Council of Pharmacy should have eliminated ichthyol from the 'New and Nonofficial Remedies' without presenting the question for consideration to the Section in Dermatology and possibly to other sections, such as Gynecology."

"I have found ichthyol very valuable in my dermatological practice. Anyone who has used this drug in dermatitis venenata (50% watery solution) will have a grateful patient. I combine ichthyol in prescribing chrysarobin and salicylic acid, which helps to reduce the severe reaction of chrysarobin in psoriasis and in epidermophyton infections. I utilize ichthyol in so many ways that it would be inadvisable, from my point of view, to exclude this drug from the 'New and Nonofficial Remedies.' I must state that I do not care for the imitations but for the genuine German drug."

"I, like you, think ichthyol a valuable remedy, and, I am sure, without exactly analyzing fully the modus operandi of its usefulness and virtue in several cutaneous disorders. You do not mention in your pamphlet the seborrhoic dermatoses and I think that ichthyol is very valuable here—maybe as much so as sulphur. I, with you, agree that ichthyol inhibits inflammatory reaction and is especially useful in the pustular skin conditions after the pus is removed or before its advent. I have always and still do believe that the remedy allays the indurative type of inflammation quite as well as anything. I do not use it in herpes zoster—an aqueous astringent lotion is better."

"I use ichthyol extensively, with or without salicylic acid, in eczema, psoriasis, lichen planus, in fact in almost every inflammatory skin disease, with the greatest of benefit. I have more than once stopped a deep palmar infection with marked lymphangitis by use of pure ichthyol bound on with thin absorbent cotton, and demonstrated the same to a surgeon at the New York Skin and Cancer Hospital who advised deep incision at once. The next morning he admitted that incision was no longer called for. I use ichthyol extensively internally in hemorrhoids, intestinal and gastric fermentation, which incidentally relieves the attendant palpitation, and I find it absolutely a specific in rosacea with telangiectasis; not only the redness and flushing disappears but most and sometimes all of the telangiectatic vessels. I would like to confront any member of the Council with some of my patients. My wife will rejoice to tell anyone what it has done for her palpitation in a serious cardio-vascular renal disturbance. I have no patience with test tube or theoretical conclusions. Ichthyol should be restored."

Those that had found ichthyol of no use commented in the following oftentimes vigorous manner:

"It seems to me that just as good results can be obtained with other remedies that are not so dirty—and which in my experience have proved of more definite value."

"I consider it practically inert except for color and odor."

"I do not see any use for ichthyol when we can use cleaner and less disagreeable methods of treating skin diseases—and certainly with more antiphlogistic effect."

"I think that better results can be obtained much more pleasantly in above conditions by cleanly methods, as various moist compresses chiefly of boric acid or saline, where such treatment is indicated and ichthyol usually used. I use ichthyol in slightly inflammatory scaly dermatoses."

"I find ichthyol a filthy mess, perfectly incapable of absorption for use in deep-seated conditions, and easily replaced by other, cleaner and really efficacious medicaments in superficial ones. It's fully a dozen years since I last used this substance for anything whatever; and even as an interne, when I had to employ it under orders of my superiors, I failed to see any sense in its application. I just read your reprint. I have had no such favorable experience as you report."

"Do not use it any longer for any condition. There are many other drugs which give as good, if not better, results, being cleaner and more pleasant."

"I could see no especial value in the drug that should make me use it. The color was not aesthetic and the odor disagreeable. I could use other applications with as good or better effect."

"I have given ichthyol internally, ordered it as a lotion, and as an ointment, and have not seen any benefit from it."

"I am afraid that I have come to an opinion that ichthyol is relatively inert without, perhaps, sufficient evidence. The conditions in which ichthyol has been used in my experience are usually of a type tending to improvement naturally, so that the beneficial result might or might not be ascribed to the drug. Usually, also, heat has been combined with it and I am firmly convinced of the beneficial action of heat in these conditions of acute inflammation. In any case I feel impressed by your advocacy and hope more critically to observe its use as I have further opportunity. I think a critical survey of a number of treatments of erysipelas would be very valuable."

"Erysipelas is the only disease in which I have employed ichthyol. It is extremely messy, sticky, and I do not find it to have any advantage over antiseptic wet dressings or weak ammoniated mercury ointment."

"Has no value with me. Its value is purely psychic, it is messy and the trouble it gives keeps the patient interested."

"Have discontinued its use because of complaints of patients regarding its discoloring action and find that other remedies give as good or better results. I find that Sat. Sol. $MgSO_4$ and Glycerine act as well in many conditions and are less messy."

"It is stinken and disagreeable. Better results can be obtained with remedies and methods more agreeable."

"Its virtues, it seems to me, are outweighed by its very disagreeable odor."

It is remarkable in the use of a simple drug in common and well recognized diseases for the most part that the therapeutic results and the clinical observations by specialists in a limited field should be so variant. This difference is most excellently illustrated by the following comments by two of the leading dermatologists and teachers in Chicago and New York respectively. The favorable comments were:

"I have used more ichthyol than any other single preparation in the last nine years. Up to 1915 or '16 I used naftalan very largely in the treatment of eczema of infants, also in several types of eczema and dermatitis venenata in adults. In fact practically all of these cases other than very chronic ones and acute vesicular ones were treated with naftalan. When it was impossible to get that we began to use a two per cent ichthyol ointment which is composed of the following ingredients:

Ichthyol	2 gm.
Pulveris amyli	25 gm.
Pulveris zinci oxidi	25 gm.
Ungt. petrolati to make	100 gm.

"All of my associates in the college and most of my students have since used it and they all agree as to its value. I was interested to find two or three years ago that Dr. —— of St. Louis was using the exact composition that we have used for these many years. I discussed the question of the value of ichthyol with some gentlemen of the *Journal* and was quite surprised when I found they had discarded it. That, however, made no difference in our use of the preparation because we have no doubt as to its value."

The conclusions of the dermatologists who found ichthyol of little use are as follows:

"For a good many years I have considered ichthyol to be a greatly overrated remedy and have repeatedly expressed this opinion, long before the appearance of the A. M. A. article on this subject. Its exaggerated reputation is due in my opinion to several facts.

"1. Its introduction by one of the great leaders in dermatology (Unna) whose name, like that of many Germans (before the war), was one to conjure with.

"2. Its mysterious origin from beds of fossil fishes in the Tyrol.

"3. The very fact that it is a dirty and ill smelling preparation. This would appeal especially to laymen, but also to some doctors, who feel that such a disagreeable preparation must have some valuable properties.

"I will not discuss the question of its composition or its supposed physiologic action, about which there seems to be such a difference of opinion.

"As a therapeutic remedy it has been used by many dermatologists and general practitioners in a great variety of skin diseases. A fairly complete list of the latter is found in the advertising pamphlet of Merck. Some of the diseases which are especially mentioned in your questionnaire are those in which it is very difficult to judge of the therapeutic action of any remedy. Several, such as erysipelas, herpes zoster, furunculosis and erythema nodosum, are self-limited diseases running a definite and short course. How such a drug of the nature of ichthyol could be expected to exert a favorable influence on erythema induratum is beyond my comprehension.

"I have used ichthyol in some of these conditions and in various other (inflammatory) skin diseases without getting any *real action* from the remedy, compared to that of salicylic acid, coal tar, chrysarobin, etc. One of our distinguished colleagues from the Middle West has long been an advocate of small doses of ichthyol (2% in Lasser paste) in the treatment of eczematous conditions. At his suggestion I gave this a thorough trial in private and hospital practice but could see no favorable action which could not be obtained by the Lasser paste alone.

"It is comparatively easy to introduce new remedies but often extremely difficult to induce the profession to discontinue their use. As an example, the acne vaccines might be mentioned. They are still widely used by general practitioners but largely discarded by dermatologists. I have tried out ichthyol and watched its effect in the hands of others and am firmly convinced that the Council on Pharmacy of the A. M. A. did wisely in omitting it from 'New and Nonofficial Remedies.' "

Shall ichthyol be reinstated in the "New and Nonofficial Remedies?"

	Yes	No	Not voting
East	54	10	12
Middle West	38	9	9
West	11	3	8
South	5	5	5
	108	27	34

It will be noted that the vote in favor of reinstatement was four to one—108 voting "yes" and 27 voting "no." Although only one man ackowledged that he had been influenced by the action of the Council, 34 (20%) did not vote either way on the matter of reinstatement.

CONCLUSIONS

It would appear that a large majority of the dermatologists of the country are using ichthyol, including the natural and the various synthetic substitutes, and are finding it useful and effective in a large number of skin diseases.

Practically without exception the dermatologists prefer to judge a drug in the light of their own clinical experience rather than according to the dictates of the Council on Pharmacy and Chemistry.

The number of men devoting their time exclusively to dermatology who have had no experience with this long-standing and common drug in many of the ordinary skin conditions seems surprisingly large.

This questionnaire illustrates more pointedly how difficult and impossible it is to get any unity of opinion upon the simplest clinical results.

Judging from the opinions of the dermatologist alone it would seem highly desirable that ichthyol should be reinstated in the New and Nonofficial Remedies by the Council on Pharmacy and Chemistry.

RECENT CONCEPTIONS OF THE SO-CALLED "TRAUMATIC NEUROSES"*

BY ISADOR H. CORIAT, M.D.

In practical work in neurology, by far the largest percentage of cases is concerned with those forms of neurotic illness termed the neuroses or the psychoneuroses, which are the most distressing, complex and stubborn maladies afflicting human beings. Under these conditions the medical problem involves several situations, namely, the exciting or precipitating causes of the nervous illness, the form of the illness and the unconscious motivating factors of the symptoms. It is to psychoanalytic investigation that we must turn for an understanding of the developmental history of the neuroses, the factors operative in neurotic predisposition and the effects of external experiences in the production of the neuroses.

In no department of medicine have there been so many divergent opinions as in the etiology of the neuroses, whether occurring in civil life from emotional situations or following an accident. This is due to two facts, namely, the great complexity of the neurotic symptoms and also because nearly all clinical investigation has been more on the descriptive than on the interpretative level, more static than dynamic, and consequently medical interest has been concentrated on the symptoms rather than the cause of the symptoms. Neuroses are links in a long chain of mental processes, usually unconscious, and show both physical symptoms and a mental component. The physical symptoms, such as paralysis, tremors or vomiting, are termed "conversion symptoms" and are the symbolic expression of unconscious and therefore repressed ideas or complexes, in the form of somatic disturbances. The mental symptoms of the neuroses likewise have their origin in the unconscious mental life and each mental symptom, such as anxiety, fear, hypochondriacal complaints, obsessive thinking or compulsive acts, may be interpreted as the end-product of a long series and a large amount of repressed material, often extending back to the earliest years of childhood. Thus neurotic symptoms, whether they occur in hysteria, the anxiety neuroses or the obsessional states, whether they take the form of paralysis, of fear of certain situations, of abnormal fatigue, or of compulsive thoughts which the patient is unable to control, are not the result of chance, but are definitely related to the entire life history of the individual, particularly concerning the instincts of propagation and the instincts of self-preservation. For this reason their underlying dynamic forces are closely related to or identical with the instinctive tendencies of the individual, that is, the ego development and the libido development, the former comprising all the non-sexual instincts, the latter referring to the sexual hunger or craving. Of course, the actual pathogenesis of the neuroses is far from simple, as for instance when a long emotional strain or a severe mental shock precipitates symptoms of hyperthyroidism or even a more severe Graves' disease, a situation here which is closely bound up with the effects of the emotions upon certain internal secretions.

In a discussion of the types of neurotic nosogenesis Freud[1] points out that a person falls neurotically ill either from an event or from frustration of a developmental process. As trauma may be designated as an event, it is only with this type of neurotic nosogenesis with which we shall deal and which will be emphasized more as a precipitating than a directly causative factor.

In order to understand the modern conceptions of the so-called "traumatic neuroses", it will be necessary to have some comprehension of what has been designated in psychoanalysis as the *libido theory*, because it is only by means of this libido theory that we can understand the instinctive tendencies of the mind. Hunger and love are the two great instincts which ensure self-preservation and propagation respectively. We therefore distinguish between the instincts of self-preservation or the ego tendencies and the instincts of self-propagation or the libido. The libido is the mental aspect of the sexual instinct and is synonymous with the desire for power in the realm of the ego-tendencies: "It may happen that the demands of the sexual impulses, which extend far beyond the individual, appear to the ego as dangers threatening its self-preservation or self-respect. When this is so the ego takes up the defensive, denies the sexual impulses the wished-for satisfaction, and forces them into those by-paths of substitutive gratification which constitute nervous symptoms''[2].

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*Read by invitation before the annual meeting of the Massachusetts Society of Examining Physicians, Boston, April 29, 1926.

We shall see the value of these psychoanalytic conceptions, particularly the idea of danger threating the self-preservation of the ego, when we come to discuss the mechanism of the traumatic neuroses. Furthermore in the symposium on "Psychoanalysis and the War Neuroses" held at the Fifth International Psychoanalytical Congress in 1918, much of what was stated in the papers read there concerning the war neurosis, can be applied to the traumatic neurosis of civil life[3]. The traumatic neuroses are practically identical with the war neuroses, they possess the same underlying factors, it is only the specific precipitating causes which are different. The psychoanalytic interpretation of the war neuroses has therefore served to illuminate the pathogenesis of the traumatic neuroses as they are encountered in civil practise.

Keeping this brief summary of the libido and ego theory in mind, with particular reference to those who fall neurotically ill from an event, let us give a condensed and rather composite description of two cases into which trauma entered as a precipitating factor. In one of the battles of the Great War, a young man was near an exploding shell, which stunned him for a moment but did not physically injure him. Shortly following this explosion, he became irritable, a marked tremor of the hands and legs developed, the former strongly resembling the tremor of paralysis agitans, finally sleep began to be disturbed by "battle dreams," in which he re-enacted, in a nightmare, the scene of the exploding shell.

In another case a young woman is in a railroad accident in which she suffers no physical injury, but at the time of the accident becomes temporarily dazed and remains in bed for several weeks, complaining of headache, fatigue and increasing irritability. Within a few weeks after the accident, periodic attacks of headache, vertigo, irritability and blind rage supervene, without amnesia, clouding of consciousness or any of the mental or physical signs of epilepsy. She too had recurrent dreams of the accident from which she would awaken in terror.

Now what had taken place in those two cases, one occurring in war and the other in civil life? In both cases, a trauma without physical injury has been a precipitating factor in the psychoneurotic disorder, leading in one instance to symptoms of a peculiar form of tremor, in the other to attacks of blind rage ushered in by headache and vertigo and in both cases by recurrent dreams of the incidents of the accident itself. In both instances we can formulate the statement that we are dealing with psychogenic reaction-types, in which the trauma was a precipitating factor, and which threw into activity certain latent and perhaps unconscious dispositions into the protean forms of a neurosis. In one case it simulated paralysis agitans, in the other outbreaks of irritability and temper which resembled a psychic epilepsy or an epileptic equivalent, but more accurately, was an hysterical neurosis. The recurrent dreams or nightmares of the accident which occurred in both cases, termed anxiety dreams, were far more intense in their emotional content, than the actual situation which precipitated the neurosis.

How can these two cases be explained? Their psychogenesis is the same, although one occurred in war and the other in civil life. In both, the anxiety dreams of the accident can be interpreted as efforts to discharge a pent up anxiety, in other words to cure the neurosis by helping to re-establish the psychic equilibrium. In the war neurosis, the patient had supported himself through military strain by an illusion connected with his ego tendencies (self-preservation), that is, a belief in his immortality and invulnerability. The effect of the shell explosion shattered this belief, the ego-security was broken into and the neurosis developed. For this reason, after a war neurosis, it is impossible or difficult to face the strain of battle again, not because of cowardice but because of the shattered illusion which produced the neurosis. The same mechanism enters into the traumatic neuroses of civil life; if for instance, the neurosis is precipitated by a railway or automobile accident, it is impossible, at least during the continuance of symptoms and in some cases for a considerable period afterwards, to ride in a train or an automobile again.

In the second case, the traumatic neurosis of civil life, the accident had precipitated and set free a form of primitive, hysterical child-like behavior, which under normal conditions is kept successfully imprisoned in the ego by repression. In a further discussion of these two cases, it might be well to quote, as pertinent to the interpretation, two short passages from Kretschmer[4], "One line of development taken by the ever advancing conception of hysteria other than its purely clinical description, has approximately the following general trend: the hysterical symptoms are ontogenetically preformed types of reaction arising from the impulsive psychic subsoil. They lie prepared in every person. This trend of thought can be found on the one hand in the psychoanalytic school of Freud, and on the other, emanating from the Darwinian theory of affectivity in Kraepelin's theory of hysteria, which Morchen and others resolutely followed in their conception of the war hysterias. . . . With every severe experience, as in war or an earthquake, not only the immature, but occasionally every person developes panic, hysterical and fright neurotic reactions, so that we may conclude with Hoche, 'every person is capable of hysteria', just because every one carries with him the old instinctive forms, but more or less firmly covered up by the younger characterological layers of culture."

Furthermore, as Abraham[5] has pointed out, and this statement can be applied to the traumatic neuroses of civil life—"The complete instability of many war neurotics, their disconcerting depressions, their propensity to thoughts of death, find a further explanation in a particular effect of the trauma. Many of the neurotically disposed persons, up to the moment when the trauma upsets them, have supported themselves only through an illusion connected with their narcissism[6], namely, through the belief in their immortality and invulnerability. The effect of an explosion, a wound or things of like nature suddenly destroys this belief. The narcissistic security gives way to a feeling of powerlessness and the neurosis sets in."

Such conceptions differ radically from the opinions cited in the vast literature which has accumulated on the traumatic neuroses, of which only the briefest outline can be sketched. In 1889 Oppenheim published a monograph on the traumatic neuroses, in which he attempted to raise a psychoneurosis with a special precipitating factor, to a clinical entity. He assumed that these traumatic neuroses were functional disturbances, produced by molecular changes in the central nervous system, principally the brain and spinal cord, although he was compelled to admit, rather contradicting his own theories, "It is true that a very small number of cases have been examined, post mortem, but in these the result was usually a negative one." Years later, in 1916, Oppenheim reaffirmed the same cause for the war neuroses, but again stated that the "condition was one which was not microscopically demonstrable."

Other theories for the traumatic neuroses have been formulated by various investigators. Strümpell refers to "imagined symptoms" produced by a desire for compensation and earlier than either of these views there are frequent references and descriptions in the literature, particularly by English and American neurologists, to "railway brain" and "railway spine". In Friedman's vaso-motor hypothesis, there is postulated a vaso-motor disturbance, in which severe emotional and physical traumata may produce a traumtic neurosis. According to Kaplan's "explosive diathesis" theory, there may occur outbreaks of irritability and temper which simulate psychic epilepsy and these conditions are accompanied by temporary dreamy states and various hysteriform and epileptiform manifestations. Ferenczi states that in bodily injury there is a reversion to the behavior of infantile narcissism, for which he suggests the term of a "pathoneurosis." According to this theory, the trauma, whether mental or physical, acts as a precipitating factor in bringing about disturbances of the fundamentals of the sexual life, the bodily or emotional injury thus centralizing all the feelings on the ego. Under these conditions, the neurotic disturbances are secondary to the injury, as in the closely related fixation neuroses or hysterias.

However, other neurologists (Lewandowsky, Schuster, Bonhoeffer and Liepman) object to Oppenheim's views that the traumatic neuroses have an organic basis. The traumatic neuroses are not special clinical entities, in fact, the drift of recent opinion is toward a psychogenic basis for neuroses of all types of origin, whether war or the trauma of civil life, aside from the factor of litigation. This new knowledge of the neuroses has resulted from neurological experience in the Great War, which experience has verified the psychoanalytic concepts of the development and etiology of nervous illness.

These modern conceptions of the traumatic neuroses based on psychoanalytic experience, as has been already indicated at the beginning of this paper, can be summarized in a few lines from Freud's descriptions[7]:

"After some shock of a mechanical nature, railway collision or other accident in which danger to life is involved, a condition may arise which has long been recognized and to which the name 'traumatic neurosis' is attached. The clinical picture of traumatic neurosis approaches that of hysteria in its wealth of similar motor symptoms, but usually surpasses it in its strongly marked signs of subjective suffering—in this resembling rather hypochondria or melancholia—and in the evidences of a far more comprehensive general weakening and shattering of the mental functions." "One may venture (tentatively) to regard the ordinary traumatic neurosis as the result of an extensive rupture of the barrier against stimuli. . . . We seek to understand the effect of the shock by considering the breaking through of the barrier with which the psychic organ is provided against stimuli and from the tasks with which this is thereby faced."

Freud furthermore points out, that neurotic patients "give the impression that they are 'fixed' to a particular point in their past, that they do not know how to release themselves from it. . . . They are marooned to their illness as it were. . . . The traumatic neuroses demonstrate very clearly that a fixation to the moment of the traumatic occurrence lies at the root. These patients regularly reproduce the traumatic situation in their dreams, in cases showing attacks of an hysterical type in which analysis is possible, it appears that the attack constitutes a complete reproduction of the situation. It is as though these persons had not yet been able to deal adequately with the situation, as if this task were still actually before them unaccomplished."

We can readily see from this, that the symptoms of a traumatic neurosis, whether headache, vertigo, fatigue, hypochondriacal complaints, tremor, hysterical conversion symptoms or nightmares, have their roots deep in the unconscious mental life, hence, such symptoms are not the result of a conscious simulation or malingering. According to this view point, there can be no such thing as a litigation neurosis or a compensation neurosis. It is true, that in the traumatic neuroses, as in all neuroses, there exists an unconscious wish to maintain and prolong the symptoms. Something is gained, not a financial gain but a protection against facing the realities of life, as shown by the fact that the neurotic symptoms may develop without litigation or persist after litigation has been satisfactorily settled. The accident therefore as previously pointed out is merely a precipitating factor in an individual predisposed to a neurosis. Furthermore a latent psychoneurosis may become active from trauma. It is the event on which the individual remains fixed and this fixation produces the hypochondriacal attitude towards the effects of the accident; whether the latter be actually slight or severe.

The traumatic neurotic is filled inwardly with a feeling or an idea of an enormous injury or rather of an enormous damage from the injury, whether this be actually slight or severe. He seeks compensation to cover all the disabilities from the injury. He feels incapacitated and inferior because his ego has received a psychical blow, consequently an egoistic avarice dominates the clinical picture of the neurosis.

The injury is merely a precipitating factor and does not actually produce the neurosis, but the neurosis is produced by an unconscious tendency for a specific purpose, the "gain" of illness. Paradoxical as it may seem every neurotic, traumatic or non-traumatic, has an unconscious desire to obtain pleasure from his neurosis, to achieve some end, such as sympathy. Hence the stubborn resistance of all neuroses to therapeutic effort.

In every neurosis, there are three factors at work:—

1. Predisposition
2. Unresolved conflicts.
3. Current difficulties.

In the traumatic neuroses it is the current difficulties which suffer the greatest damage, but these current difficulties are reinforced by the other factors which make up the components of the ego and which constitute the factors of the personality.

The traumatic neurotics become fixed upon the trauma, they do not know how to release themselves from it, they are sort of anchored to the traumatic experience. In fact, all neurotic patients refer to the outbreak of their neurosis as due to a particular incident or event, whereas psychoanalytic experience has shown that the incident was merely a precipitating factor on which they had become fixed and that real cause lay in the unconscious mental life. Thus the traumatic neuroses present no new problems which do not appear in the non-traumatic neuroses except those of the precipitating factors of the accident. Repeated anxiety dreams or nightmares of the accident are usually a bad prognostic factor because they demonstrate that the patient is unable to abreact or discharge the original psychogenic experience, the shock of the accident, but it remains fixed in his personality, he is unable to neutralize it or to wall it off. In the light of this, if we assume a compensation or a litigation hysteria, we must also assume a deliberate conscious malingering, an hypothesis which fails to take into account the fixation of the original trauma and the unconscious factors of the neurosis. If pension and compensation were not involved, the name "traumatic neurosis" would disappear from medical nosology, but not the neurosis itself. For instance, after the Messina earthquake Stierlin found that 20% of the victims had symptoms of a psychoneurosis and that these victims had no neurotic symptoms before the catastrophe. The mechanism of the traumatic neuroses is the same as in conversion hysteria, anxiety hysteria and the obsessional neuroses—only the precipitating factor, the fixation differs.

Thus the patient's emotions have become fixed on the accident, but he endeavors unconsciously through dreams to get rid of the original emotional terror and he also attempts, by flight or an escape into disease, to neutralize or heal the original psychical wound to the ego. A slight predisposition and a severe shock can produce the same effect as an increased predisposition and a lesser degree of shock. However, this disposition must also be analyzed and understood, into those factors which influence the choice of the neurosis.

The original swoon or unconscious period in a traumatic neurosis, when there is no serious head injury, is not a concussion symptom, but a psychogenetic one. Its purpose is flight into unconsciousness in order to neutralize or escape from the painful or terrifying situation of the accident.

To state as some writers have stated, that a medico-legal opinion in a traumatic neurosis—should have objective as well as subjective evidence, fails to take into account the mechanism of neuroses in general. Practically all neuroses, in which there is no trauma or litigation, are free from objective symptoms, and yet their entity as psychogenic reaction-types, is not denied. Psychogenic headache or fatigue, for instance, can never be objectively demonstrated. Their existence is not questioned. Why then deny or minimize it in neuroses with trauma?

The psychogenetic origin of the symptoms, the significance of unconscious impulses and mechanisms, the flight into disease, the advantage of being ill are characteristic of all neuroses. Traumatic neuroses are due to an ego conflict—to a blow to that component of the ego which has been termed the narcissism. The ego protects itself from further danger by a flight into a neurosis. These traumatic neuroses, because so deeply rooted and complicated, are very difficult to treat, and the prognosis concerning duration, corresponding uncertain. An organic-mechanistic explanation, as was formerly held, can no longer be accepted, in the light of experience with war neuroses, such as physical alterations in the central nervous system, which was conveniently but superficially explained by the alliterative term of "shell-shock." In the traumatic neuroses, we find the hysterical conversion symptoms, feelings of anxiety or terror, irritability, depression, or more commonly, the hypochondriacal or neurasthenic syndrome, whose chief symptom is easy fatigue. The normal interests of the patient are drawn into the ego and thus there occurs the hypochondriacal complaints, the over-sensitiveness and the organic sensations, particularly of fatigue. This self-love may become a childlike reaction, they want to be pampered and cared for like children—hence my definition of all neuroses, traumatic or otherwise, is a childhood reaction to an adult situation. The more narcissistic an individual, the more egoistic, the more is he disposed to a traumatic neurosis. Hence the personality traits are of importance, particularly if we consider the trauma, not a direct etiological but merely a precipitating factor. The trauma injures the ego psychically, the fear or anxiety are loss of confidence, the rage, irritability and outburst of anger, are very primitive and childlike reactions, all produced by this injury to the ego, which up to the time of the accident, possessed the illusionary belief that it was all-dominating and invulnerable. The accident had found a vulnerable point in the ego, its Achilles heel, to speak metaphorically. The traumatic neurosis is not a gain, this is secondary and not primary—the primary motive is a flight from adult realities to the pleasure of the retreat to a childlike situation.

In the light of these newer psychological conceptions, a traumatic neurosis is the result of an event, a precipitating factor in the form of an accident. This accident produces a more or less severe blow to the ego-tendencies of self-preservation and the neurosis results. The blow has left sort of a psychical scar on the personality of the victim and the neurotic symptoms are efforts to escape from this wound or to neutralize it—in other words, the neurotic symptoms, as a pathological process, are for the purpose of protecting the wounded ego from further injury in facing the realities of life. This conception differs radically from the ideas of the French school of psychopathology, which insists that the trauma may be a direct cause of a neurosis, in that it produces a mental dissociation.

In a particular accident, not all the individuals involved develop a traumatic neurosis, but only those whose ego or self love is of a peculiar or a particular nature, that is, an ego which has not reached a complete and mature adult development. These neuroses are therefore not the effect of mechanical force or actual physical injury, but are produced by the fright, fear and the menace to life or to the integrity of the personality, which the accident entails. The ego protects itself from danger by a flight into the neurosis, an escape into disease. In the traumatic neuroses the ego fears an injury from without, in the neuroses which develop without accident, the ego is threatened from within, from ungratified instincts. It is of interest too, that if a severe physical injury takes place at the time of the accident, a traumatic neurosis either does not develop at all or if it does so, is much less severe. This for the reason that the object of the ego becomes then the physical injury, the ego is sort of wrapped up in this injury and so escapes the greater part of the injury to itself.

If we classify the neuroses according to the particular conditions which produce the outbreak, the following can be presented as a convenient practical scheme:—

1. Neuroses due to denial of complete sexual gratification.
2. Neuroses due to the inability of adaptation to external conditions.
3. Neuroses which appear at critical biological periods of life such as puberty, childbirth, lactation and the menopause.
4. Neuroses due to inhibitions of ego and libido development, in other words, neuroses appearing in individuals who have never overcome their childhood methods of gratification.
5. Neuroses precipitated by the effects of trauma on individuals who already show some of the conditions as briefly classified above.

Efforts at physical therapy tend to reinforce the neurotic symptoms, particularly in cases showing tremor, paralysis, fatigue or headache. The best method of treatment is a modified or a simplified psychoanalysis—the mental catharsis or abreaction of the earlier and less elaborated psychonalytic technique, associated with intelligent explanation, particularly of the fixation of the symptoms of the accident and how this fixation retards the cure, regardless of compensation or litigation. Because the cause of the neurosis is psychic, the treatment must be psychotherapeutic—that is, an analytical conversation or understanding, as in most cases, for practical reasons, it is impossible to undertake a complete analysis.

Many of these cases, whether of the hysterical, anxiety, hypochondriacal or obsessional types, recover spontaneously, regardless of litigation. In fact, many cases are entirely well at the time of court action. It is doubtful, however, if any of these spontaneous cures are permanent or genuine, as in many of them the neurotic symptoms disappear only through sort of a phantasy gratification, which is resolved neither in reality nor in sublimation. Consequently all so-called spontaneous recoveries are not genuine even if the clinical symptoms completely disappear, because neither the libido nor the ego of the patient has received that re-education which only is possible through analytic therapy. Under these conditions anything which in the future may upset the ego or libido equilibrium, such as an accident, may again precipitate the identical symptoms which were present before the spontaneous recovery, or in certain cases different neurotic manifestations may appear. The prognosis is also dependent upon the character type of the afflicted individual, who may have been of an hysterical, anxious or compulsive make-up, years before the accident.

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CHOLECYSTOGRAPHY*

BY F. S. EVELETH, M.D.

PREVIOUS to a few months ago most radiologists have hesitated to say what could be expected from a careful x-ray examination of the gall-bladder, as in the hands of even a competent roentgenologist a diagnosis of gall-bladder disease was correct in only about 30-40% of cases, but thanks to the persistent and courageous efforts of Drs. Graham and Cole of St. Louis the development of cholecystography by the administration of the tetraiodophthalein sodium salt has made the x-ray examination of the normal and pathological conditions more definitely differentiated.

Blackford and Dwyer demonstrated in 1924 that the disease of the gall-bladder was the most common cause of dyspepsia. It is therefore obvious that any practical method which will aid in the diagnosis of cholecystitis or cholelithiasis will be most appreciated.

What we wish to know is whether in case of clinically diseased gall-bladder on chronic dyspepsia there is any pathology shown in a roentgenogram of the gall-bladder region. Formerly or previous to a few months ago there were two methods of examination, one was the direct visualization of the gall-bladder and its contents under certain favorable conditions, for example:

"1—A gall-bladder with calcified walls or
2—When there were stones containing sufficient lime salts to cast a shadow
3—If its walls were hypertrophied
4—If it contained inspissated bile
5—An obstructed gall-bladder with hydrops"

The second method was by observing the secondary signs of a pathological gall-bladder demonstrated by giving barium meal and noting the filling defects produced upon the antrum of the stomach and various portions of the duodenum and hepatic flexure. These filling defect signs were dependent upon the supposition that a normal gall-bladder did not cause filling defects upon these adjacent parts whereas a gall-bladder which did produce these was pathological. Occasionally the first and second portion of the duodenum showed displacement to the right due to adhesions from a pathological gall-bladder or a pseudo hepatic flexure from adhesions suspending a portion of the transverse colon.

These direct and secondary signs of gall-bladder disease were helpful in about 35% of cases; but these were not always positive and were sometimes deceptive. Many of us have seen shadows in the gall-bladder region which were misinterpreted as pathological gall-bladder and others claim that a normal gall-bladder will occasionally cause a filling defect upon the upper portion of the digestive tract (shallow defects). The filling of the ampule of Vater by the barium meal when present should indicate that we are dealing with a diseased condition of the biliary tract or pancreatic disease.

The successful results of the examination of the stomach by the x-ray, derived from the administration of barium meal have been productive of extensive study and experimentation for some substance which, taken up by the blood stream or intestinal tract and secreted by the liver would produce a shadow of the gall-bladder and demonstrate its various anatomical and pathological conditions. After experimenting with many and varied chemical substances Drs. Graham and Cole have given us a dye (tetraiodophthalein sodium salt) which injected intravenously under normal conditions, shows us a very satisfactory shadow of the gall-bladder provided the technic is properly carried out. There are three methods of administering the tetraiodophthalein as you know, namely the intravenous, jejunal and oral. Personally I have had no experience with other than the oral method which I have used for a year. My reason for not using the intravenous method is because of the difficulty of technic (danger of phlebitis and necrosis at the point of injection due to extravasation) and the marked reaction which the patient has occasionally shown to the dye.

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*Read before the New Hampshire Surgical Club at the 28th semi-annual meeting, held in Nashua, N. H., April 27, 1926.

It is generally conceded by roentgenologists that over 90% of the normal gall-bladders can be visualized by the dye examination.

It is interesting to note now that there are means of visualizing the opaque gall-bladder that the relationship of bodily habitus to the form, function and tonus of the alimentary canal demonstrated by R. W. Mills in 1917 applies with equal force. An asthenic should show a long, laterally narrow gall-bladder in a low position, the sthenic individual should show a shorter, almost circular shadow close up under the costal margin.

Dr. Graham has aptly stated that cholecystography is pre-eminently a function test of the gall-bladder and it does not necessarily reveal the exact pathological lesion. Dr. Graham and his co-workers have shown that clinically and experimentally cholecystitis does not exist without hepatitis. The infection invariably beginning in the liver, carried there from distant focus, through the portal system, travels to the gall-bladder by way of the rich lymphatic supply. It is pleasing to note that here in New England at the Peter Bent Brigham Hospital, Drs. Whitaker and Sosman have contributed the most satisfactory results from the oral administration of the dye. They have thus far shown that the dye can reach the gall-bladder in sufficient quantities under normal conditions. If it does not do so, there is sufficient reason to expect that there exists some abnormal condition either in the digestive tract or in the biliary tract, if the proper technic is carried out.

Whitaker and his co-workers have shown by experimentation with lipiodol and x-ray upon dogs the emptying action of the gall-bladder, which demonstrates the gall-bladder empties through the cystic duct and contracts by shortening and against gravity.

The gall-bladder shows less density of shadow by the oral than by the intravenous method, and there are two variable factors which must be checked up when the oral method is used; the patient's intestinal tract must be able to digest the capsule and its content, and absorb the dye.

The percent of opaque gall-bladder shown in normal persons administered the dye is very high. Dr. W. Stewart of New York claims that out of 65 cases the shadow was missing in only four. Drs. Menees and Robinson claim that out of 44 cases 6 showed no shadow, and Dr. D. Enfield in his article on cholecystography states that his last 200 cases 90% showed a well-outlined gall-bladder.

Granting that 90% of gall-bladders show an opaque shadow in normal persons it is fair to presume, that if the gall-bladder does not show we have a chemical error or pathological condition and the causes of interfering with the normal excreting of the dye should be considered. Three common causes are:

"1—Occasionally capsules disintegrate in the stomach and are vomited.

2—Capsule content may combine with hydrochloric acid and form an insoluble salt.

3—Hyperperistalsis of the intestines is too rapid to allow sufficient time for the absorption of the dye."

The oral method of introducing the dye is used by the majority of roentgenologists. The preparation of the patient is most important and the carrying out of the correct technic most vital for a successful cholecystogram. When possible every patient should take a laxative two days before the examination is to be made, no laxative is to be taken the day the dye is given. It is important also to take a film of the patient before the dye is administered to avoid showing the disintergrated tetraiodo, and also to check up the later films if this is possible. It is important to give the patient plenty of water during the taking of the capsules.

Personally I have used mostly the Kerasol capsules. While the technic of examining the opaque gall-bladder is not yet standardized it is of unquestioned value in the diagnosis of the gall-bladder disease.

Occasionally a patient will have no reaction to the dye but about 10-12% have nausea, vomiting or diarrhoea, which soon passes off. The average dose to a patient is 40 grs. to 150 lbs. This is given in 5 gr. capsules every 15-30 minutes about three hours after a light supper containing fats. The patient then has no more food until after the cholecystogram has been taken. The capsules are treated to resist the acid of the stomach and to dissolve readily in the intestinal tract, where the dye is taken up by the superior mesenteric and other portal veins. The dye reaches the gall-bladder in from 12 to 18 hrs. at which time the roentgenogram should be taken. A diet rich in fats is then given and the gall-bladder will be seen to diminish preceptibly in 1½-2 hours, when other films are taken.

I have never seen a case of jaundice which showed the dye in the gall-bladder. In order that it may be visualized it is necessary as has been pointed out by Drs. Graham, Cole and others that:

1—The technic be correct.
2—That the liver excrete the dye.
3—That the hepatic, cystic and common ducts be patent.
4—That the gall-bladder have the ability of emptying and filling itself.
5—That the gall-bladder once filled, it be of a size to contain a sufficient amount of dye to give rise to a shadow.
6—That the gall-bladder be able to concentrate the dye.

Failure to secure a shadow in the presence of a standard technic indicates:

"1—Failure of absorption of the dye.
2—Cystic duct occlusion (stone, catarrhal or other condition producing obstruction).
3—Hepatic insufficiency.
4—Small gall-bladder with obliterated lumen."

The contraindications given by Dr. Carmen of the Mayo Clinic are:

1—Obstruction of the common duct.
2—Extensive hepatic damage.
3—Marked diabetes.
4—Hyperthyroidism.
5—Arteriosclerosis.
6—Cardiac disease, especially that attended with fibrillation.
7—Hyperemisis.
8—Advanced cirrhosis of the liver.
9—Pregnancy.

This new direct view of the opaque gall-bladder shows us the opaque stones, and also those that are non-opaque when surrounded by bile, in the form of negative shadows. We are also able to locate the position of the gall-bladder, and have an idea as to the size, shape and emptying power of the gall-bladder, and learn to a certain extent the function of the liver.

Considering the difficulty there is in diagnosing vague pathological abdominal conditions, roentgenologists feel that the visualization of the gall-bladder, taking in consideration both the direct and indirect methods, is an extremely valuable adjunct to medicine and that it is rather underestimated by the entire profession.

TRYPANOSOMIASIS: RELATIVE FREQUENCY IN THE UNITED STATES, TRYPARSAMIDE THERAPY IN REFRACTORY CASES

BY KENNETH M. LEWIS, M.D.

THE relative frequency of trypanosomiasis in the United States and the occurrence of certain types of cases refractory to treatment, have been brought rather closely to my attention during the past three years.

Since May, 1923, I have had the privilege of seeing and having under my care six cases of this disease. Of this number there are several that are still receiving treatment at their homes in different parts of the United States. The disease in all cases was received on the West Coast or the interior of Africa and the patients were either missionaries or individuals that were doing work of an economic nature in Africa. Cures may be safely assumed in all of these cases.

A seventh case who passed through my hands about two years ago and whose physical examination at the time was entirely negative, has since developed trypanosomiasis and is now under treatment by his physician in his home city. This makes a total of seven cases that I have been in contact with, within three years' time, and would most decidedly indicate that there must be other cases in the United States, the diagnosis of which is probably missed due to the lack of familiarity with the disease on the part of the physician with whom these patients come in contact, and also to the fact that symptoms and physical signs may not develop until months after the time of infection.

There is direct contact continually between Africa and the United States and indirect contact through Europe, and there are constantly numerous individuals, either missionaries, sailors, or men of various pursuits, who have resided for a longer or shorter time in tropical Africa.

It is therefore important that we be on the outlook for these cases, especially as in tryparsamide we have what is practically a certain cure for the disease.

The last two cases that I have had under my care were extremely refractory to treatment, including the ordinary sized doses of tryparsamide. Largely through the kind help of Dr. Louise Pearce of the Rockefeller Institute for Medical Research, we feel that a definite advance has been made in the tryparsamide therapy of such cases. This, briefly, is in the use of massive doses of tryparsamide given at intervals of every other week over a period of about four or five months. The size of the dose should be chosen with regard to the general condition of the patient. In these two cases the first dose was five grams, the second dose six grams, and all subsequent doses seven grams. If eye symptoms develop the size of the dose may be cut down, but it should still be kept as large as the patient can stand.

Dr. Pearce feels that the probable explanation of the favorable results obtained in these two cases by using seven gram doses of tryparsamide as contrasted with the usual three gram dose, lies in the fact that these patients were unable to metabolize properly the smaller dose so as to obtain a therapeutic trypanocidal action and hence required the larger dose to accomplish this effect.

A brief report of these two cases is as follows:

*Case 1. H. P. S. First seen July 2, 1925, by Dr. Justus B. Rice, in Loanda, Angola, Africa. Infected one month previously by tsetse fly bite on chin. Intermittent fever, weakness, loss of weight, anemia, enlarged cervical lymph nodes, spleen palpable and tender, and pustular eruption on the face, back, and abdomen. The peripheral blood showed numerous Trypanosoma Gambiense. The spinal fluid was negative. Treatment was started July 2 with a two-gram dose of tryparsamide and continued by giving weekly intravenous doses of two or three-gram doses of tryparsamide until a total of 21 grams had been given. Severe reactions, consisting of a chill, vomiting and temperature up to 105°, occurred after about half of the injections. Trypanosomes were constantly found in the blood except at intervals of several weeks, and at the conclusion of treatment organisms were still present.

At this time he was sent back to the United States and came under my care. I first saw him on October 2, 1925, at which time his physical examination was essentially negative except for a slight secondary anemia and the presence of a large number of trypanosomes found in the peripheral blood, employing the triple centrifugalization method described by Broden. The spinal fluid was negative, the enlarged lymph nodes had practically disappeared, the spleen had returned to normal, and all other evidences of the disease had cleared up except for the presence of trypanosomes.

At this time four intravenous injections of tryparsamide in three-gram doses were given at weekly intervals, without in the least affecting the trypanosomes in the circulating blood. They were constantly found. The patient was then given four injections of Bayer 205 in one-gram doses a week apart without any effect. The situation at this point appearing rather critical, it was decided to try massive doses of tryparsamide. The patient was therefore given a five-gram injection of tryparsamide, two weeks later a six-gram dose, two weeks later a seven-gram dose, and thereafter seven grams every two weeks. On the alternate weeks he received intravenous injections of tartar emetic in 100-mg. doses dissolved in 10 cc. of saline. Immediately following the five-gram dose of tryparsamide the blood became trypanosome-free and remained so thereafter. The secondary anemia cleared up, his weight returned to normal, and it is felt that a cure has been obtained. Frequent examinations of the spinal fluid were always negative, and the patient when last seen in March, 1926, was in excellent physical condition.

Case 2. R. H. M. First seen June 22, 1925, by Dr. Justus B. Rice, at Loanda, Angola, Africa. Three weeks before, a bite on the hand by a tsetse fly was followed by fever and loss of weight. Previous to this he had had several attacks of malaria. Examination gave the following findings: Spleen edge just palpable, enlarged lymph glands in both axillae but not in neck, a moderate secondary anemia, and the presence of Trypanosoma Gambiense in the circulating blood and in the material aspirated by gland puncture. The R. B. C. were 3,000,000 and the Hgb. 85 per cent. The temperature ranged to 103°.

The patient received intravenously two and three-gram doses of tryparsamide at weekly intervals over a period of about two months with an improvement in the general physical condition but without sterilizing the blood of the trypanosomes. At this time he returned to the United States, and I first saw him on October 2, 1925. The treatment I gave him was exactly the same as in Case 1 and with exactly the same results. His spinal fluid was always negative, and when discharged in March, 1926, he had regained an entirely normal physical condition and his blood was trypanosome-free.

Neither of these cases had reactions of any kind following the large doses, and both will continue tryparsamide treatment with seven-gram doses every other week until about July 1, 1926. This treatment will be given in their home cities. After a rest period of two months, treatment should be resumed and a second course similar to the first be given, because of the well known tendency of this disease to relapse.

CONCLUSIONS

(1) Trypanosomiasis is probably more frequent in the United States than is usually believed. With increased trade relations with Africa a larger number of cases will probably be seen in this country.

(2) In patients in whom the ordinary sized three gram dose of tryparsamide does not clear the blood of trypanosomes, seven gram doses intravenously, given every other week over a period of five or six months are advised. On the alternate weeks 100 mg. doses of tartar emetic administered intravenously may be used. By this procedure it is felt that practically any case of trypanosomiasis caused by Trypanosoma Gambiense, no matter how refractory, can probably be cured.

ACTIVITIES OF ANTIVIVISECTIONISTS

In Oklahoma the antivivisectionists have asked to have the permission which has been granted to the Oklahoma University Medical School to use impounded animals for experimental work rescinded.

Some persons have been led to believe that these opponents of animal experimentation are quiescent.

The recrudescence of these organizations is bound to be in evidence at times because of the inability of some kind hearted persons to appreciate the tremendous service to human beings and other animals rendered by these comparatively worthless creatures. The problems of life must be solved by a study of life and true science must be unhampered if we are to have the benefits of definite knowledge in dealing with disease and its prevention. History gives the record of innumerable voluntary contributions to mankind by human beings, some involving the surrender of life.

Should we not draft the humble dog, rabbit and guinea pig in our efforts to save life and not depend on voluntary service by human beings?

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*The preliminary treatment and care of these two cases in Africa will probably be included in a series of cases that Dr. Rice will publish at a later date.

The Massachusetts Medical Society

THE CONTROL OF THE COMMUNICABLE DISEASES PREVALENT IN MASSACHUSETTS*

With a Study of the Mortality Due to Them During the Past Seventy-Five Years

BY EDWARD G. HUBER, M.D.

(Continued from page 127)

CONTENTS

Chapter — Page
I Introduction — 87
II History of Quarantine — 122
III History of Quarantine in Massachusetts — 169
IV Definitions of Terms and of Topic — 172

III. HISTORY OF QUARANTINE IN MASSACHUSETTS

During the first seventeen years following the founding of Boston in 1630, no steps whatever, so far as can be ascertained, were taken by those in authority in the Colony to exercise any quarantine procedures, although the "townsmen" made frequent orders the purpose of which was to regulate the internal health of the towns. Probably this lack of legislation was partly due to the fact that the colonists came from England, where quarantine measures as developed and practiced in the Mediterranean seaports had not yet been adopted. Nevertheless the settlers of the Colony of Massachusetts were not without certain diseases to contend with, which diseases had existed among the Indians before the establishment of the Colony. In 1618 and 1631 there had been very severe epidemics, probably of small pox. Again in 1639 and 1654 there were extensive outbreaks of small pox and "fevers," and these epidemics were occasions for the ordering of general fasts. In all probability the "fevers" referred to included typhus particularly and also, to a less extent at that time, yellow fever. The former, under the name of ship fever, must have been common, for under the conditions which existed on shipboard, namely, overcrowding, long voyages, and lack of facilities for cleanliness, an infected individual supplied with lice could transmit the disease to a wide circle of contacts. Yellow fever did not reach Massachusetts so frequently as it did the more southerly settlements, and not until commerce with the West Indies was developed.

The earliest quarantine regulations in Massachusetts have already been referred to, namely, the order of the General Court in 1647, its repeal in 1649, the "warrant" in 1665 against the plague in England, its repeal in 1667, the small pox quarantine ordered by the Selectmen of Salem in 1678, and finally the Colony quarantine law of 1700 which was disallowed but passed again in 1701. These were as early as any regulations among the Colonies; in most instances ever since, Massachusetts has been well in the lead in all health legislation. Owing to the fact that government in Massachusetts has, from the very earliest days of the Colony been more decentralized than in any other of the Colonies and States, health laws which seemed necessary were adopted earlier, were more varied in scope, and were more frequently changed as conditions changed. Local authorities had full power to act. They were generally required to report their action in each case to the governor or council who would then take action, if necessary. The health laws of Massachusetts have always been more general than those of other States. Local authorities have been given full power to use their judgment in the formation of rules and regulations, with the result that sanitary administration in Massachusetts has had advantages over that in States where detailed laws often obsolete have been retained on the statute books.

On July 18, 1669, ships visited with small pox or any other contagious disease, or coming from any place visited with such sickness, were ordered not to come above the Castle in Boston Harbor without a license. The Captain of the Castle was required to enquire as to the health of each ship, as it came in.

The quarantine law of 1701-1702 (ch. 9) consists of two parts, namely, one devoted to land quarantine and the other to maritime quarantine. In the land quarantine section, authority was delegated to the selectmen of the towns to remove and isolate any individuals sick with any diseases then considered communicable. This section of the law was of course chiefly directed against the ever present small pox, since this disease was responsible for most of the ravages of sickness. Peabody thinks it no wonder that the population of Boston remained stationary during the greater part of the eighteenth century, as there were so many deaths from small pox.

The other part of the law of 1701-1702, that dealing with maritime quarantine was more specific. Massachusetts had several seaports which engaged in foreign commerce, and the procedure outlined was made applicable to all. The justice of the peace was ordered to prevent the coming on shore of any person from a ship which had had plague, small pox, pestilential or malignant fever during the voyage, or which came from a port where such diseases prevailed. He was likewise to prevent anyone going on board such a ship. His authority extended to making out a warrant, if necessary, for the sheriff or constable.

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In 1717 the Council purchased a part of Spectacle Island for a province hospital, which was finally established in 1719. In the language of the law (1717-1718, ch. 14) which simply modified the Act of 1701-1702 in order to make use of this hospital, this institution was "for the reception of such as shall be visited with contagious sickness, to keep them from infecting others." Sick persons "and everything else on board an infected ship, that may give infection (proper to be put into the said house)" were to be removed from the ship to the hospital. No one from the mainland was allowed to enter the hospital nor were those on duty there allowed to leave. This law was enacted to be in force until 1723. In that year it was re-enacted and remained effective until 1728

In 1721 when "plague and other pestilential and mortal distempers" prevailed in French and other Mediterranean ports, a forty day quarantine was ordered against those cities. Vessels coming from other places, which had been in France within six months or had taken on goods from France, were also subject to this law. This act was in force three years (1721-22 ch. 3).

In 1728 an act was passed substantially the same as that of 1717 which had been re-enacted in 1723 to be effective until 1728. The new act was to be in force until 1738.

The hospital on Spectacle Island was in use until 1737, when it was discontinued in favor of a new one on Rainsford Island. The latter remained in service until 1849, when the hospital and quarantine were transferred to Deer Island. In 1738, 1743, 1749, 1751, and 1757 acts were passed, further regulating the hospital on Rainsford Island. There was no quarantine legislation during the Revolution; and during this time the hospital on Rainsford Island was damaged by the enemy. In 1780 the Selectmen of Boston were authorized to repair that damage.

There were several legislative acts concerning land quarantine during the period from 1739 to 1797 at the end of which the permanent quarantine act was passed. In 1739 small pox was very prevalent in New York, but not in Massachusetts. All persons coming to Massachusetts from places where small pox existed were ordered to report immediately on arrival to selectmen who then could forcibly remove them if necessary. Guards were also placed at ferries, etc. (1739 ch. 1). Three years later (1742-43 ch. 17) this law was re-enacted with the additional provision that when small pox broke out in a house a red flag must be displayed in front, except that when twenty families in a town were attacked at the same time, flags were not required. The selectmen were authorized to determine (after thorough cleansing) when the flags might be removed. This law was repeatedly renewed, until the Act of 1797 incorporated its provisions in the new law. In 1751 there was an addition to the law, authorizing justices of the peace, on request of the selectmen, to issue warrants for detention of baggage and merchandise for investigation and disinfection if it was thought that the goods were infected with plague, small pox, etc. By the law of 1763-64 (ch. 17) selectmen were authorized to appoint guards who, armed with a warrant might prevent persons entering or leaving a house where there was small pox.

All previous quarantine laws including the special regulations in force during the 1793 Philadelphia yellow fever epidemic, became the basis for the law of 1797 (ch. 16), which did not require re-enactments. The innovation, at the time of the Philadelphia yellow fever epidemic, of authorizing each town to appoint a health committee and a health officer, was incorporated in the new act. The power of the Selectmen of Boston over quarantine was increased. The hospital on Rainsford Island was opened to cases of small pox, plague, etc., which originated on land. Selectmen were also authorized to remove contagious cases to separate houses where they were to be given full care; and in order that these "separate houses" might be available they were empowered to take up convenient houses, lodgings, and nurses for the accommodation, safety, and relief of the sick.

Yellow fever did not visit Boston until 1798 except in the years 1647, 1665, and 1693. It is not at all certain that all three of these epidemics were yellow fever; most probably the first and third actually were that disease. The second seems doubtful. Consequently small pox was almost always of much greater importance. But in 1798 yellow fever spread throughout the United States. At this time a bitterly contested dispute arose among medical men as to the etiology of the disease. On the one hand it was contended that it came from atmospheric conditions due to poor drainage, bad general sanitation and the like. The other side insisted on the contagious nature of the disease and that it was imported from the West Indies. The former group were somewhat favored, since success certainly had not crowned the efforts of those enforcing quarantines. As a result, there arose a tendency to give health boards special authorizations to deal with nuisances. This was first seen in Massachusetts in 1799 (ch. 10 and ch. 14) when Boston and Salem were authorized to have boards of health which, in addition to performing the usual quarantine were to abate nuisances. The Act of 1799 (ch. 59) gave power to the selectmen or boards of health or health officers of the various towns, similar to that given to the boards of health of Boston and Salem These statutes remained practically unchanged until the Revised Statutes were published in 1836.

The law of 1816 (ch. 44) was an additional act for the town of Boston. The board was to consist of an elected member from each ward and was authorized to make rules and regulations and to take necessary action.

In 1822 when Boston became a city, the powers previously given to the health board were vested in the City Council. The latter was to appoint health commissioners who were to carry into execution the health measures prescribed by the Act of 1816 (1882 ch. 110 sec. 17). Other cities as they were given charters received similar authority. Thus, the practises differed according to the views of the respective boards of health. In the law of 1849 (ch. 211), after the great cholera epidemic, city councils were authorized to delegate their authority to anyone they wished.

In 1836 the Revised Statutes were published. In so far as health regulations were concerned, they were practically nothing more than a rewording of old laws, and in addition the 1816 Boston Act was made to apply to the entire State (R. S. ch. 21 secs. 27-34).

In 1866 the buildings on Gallop's Island were purchased for use as a quarantine hospital, for many immigrants from cholera-infected ports were expected. The quarantine hospital on Deer Island remained such until 1867 when it was transferred to Gallop's Island. Small pox was prevalent in Boston at that time and many cases were at Deer Island which for that reason was retained in service several years longer. These cases and others from various parts of the city were sent to Gallop's Island during the severe epidemic of 1872-1873. There were as many as a hundred patients at a time at that hospital. During this epidemic a board of health was created in Boston, with all the powers of the City Council vested in it. An inland hospital for small pox was established and no more cases were sent to quarantine.

The General Statutes (1860 G. S. ch. 26 secs. 32-39) did not change the health provisions of the Revised Statutes of 1836, nor did the Public Statutes of 1882 (P. S. ch. 80 secs. 62-69).

In 1863 an ordinance in the City of Boston prescribed that the Board of Aldermen were to constitute the Board of Health. In 1872 an ordinance required the appointment by the mayor of three persons, to form a board of health, although this was not required by state law. Act of 1877 (ch. 133) required the submission to vote, in each city, of the question whether a board of health should be established in accordance with the Act of 1822. If the city voted to accept, then all the old powers of the city council over health matters were vested in the board of health.

Up to the time of publication of the Public Statutes in 1882, the only diseases mentioned by name were small pox (P. S. ch. 80 and 86), plague (P. S. ch. 80) and rabies (P. S. ch. 102). Small pox had been made a notifiable disease in 1827. Terms used in P. S. ch. 80 referring to the communicable diseases were "other diseases dangerous to the public health," "an infectious distemper," "severe epidemic," and "articles capable of conveying infection." Such terms of course allowed considerable elasticity in interpretation. In 1884 (ch. 98), diphtheria and scarlet fever were made notifiable by physician or householder, and certain disinfection requirements were added in 1885 (ch. 198), 1890 (ch. 102), and 1891 (ch. 188). Certain legislation concerning typhoid (1883 ch. 124), syphilis (1891 ch. 420) and measles (1898 ch. 496) was also passed. In addition, progress was made toward the control of diseases common to man and animals when a cattle commission was appointed for the study of tuberculosis, glanders and rabies. At about the same time provision was made for the isolation and treatment of tuberculous patients in a state hospital for consumptives.

In 1893, chapter 302, enacted that it was the duty of the local board of health to report cases of small pox or other disease dangerous to the public health, of which it knew, to the State Board within twenty-four hours. This law became effective in June, 1893, but reports did not come in until the State Board sent out a circular, suggesting the following diseases for notification in addition to small pox, diphtheria and scarlet fever already notifiable:

measles
typhoid
membranous croup
cholera
yellow fever
cerebrospinal meningitis
hydrophobia
malignant pustule
leprosy
trichinosis
typhus

Success in getting reports on these diseases was, however, discouraging.

In 1907 the legislature passed an important act. Chapter 183 provided that the State Board of Health be authorized and directed to define what diseases were "dangerous to the public health." All succeeding legislation referring to these diseases inserted after the word "disease" the clause,—"declared by state board of health to be dangerous to the public health." This legislation had become very necessary since that vague phrase had been the cause of considerable confusion and even litigation. There had been no uniformity in reporting illnesses to local boards, nor in the reports of the local boards to the state board. The latter met on August 1, 1907, and declared the following diseases to be dangerous to the public health and notifiable:

- actinomycosis
- Asiatic cholera
- cerebrospinal meningitis
- diphtheria
- glanders
- leprosy
- malignant pustule
- measles
- scarlet fever
- small pox
- tetanus
- trichinosis
- tuberculosis
- typhoid
- typhus
- varicella
- whooping cough
- yellow fever

This included the entire list of 1893 except membranous croup and hydrophobia, with six additional.

On May 7, 1914, the following diseases were added to the list by the Board:

- pellagra
- rabies
- German measles

On December 15 of the same year the following additional diseases were declared to be dangerous to the public health:

- anterior poliomyelitis
- anthrax
- chicken pox
- dog-bite
- dysentery
  - (a) amebic
  - (b) bacillary
- hookworm disease
- infectious diseases of the eye
  - (a) ophthalmia neonatorum
  - (b) suppurative conjunctivitis
  - (c) trachoma
- malaria
- mumps
- plague
- septic sore throat
- tuberculosis (all forms)

This list named anthrax instead of malignant pustule, and chicken pox instead of the varicella of the 1907 list.

In 1917 syphilis, gonorrhea, and lobar pneumonia became reportable. Influenza followed in 1918, and encephalitis lethargica in 1921.

There have been, broadly speaking, two periods in quarantine legislation in Massachusetts. During the first, efforts were concentrated against yellow fever, small pox, and cholera. During this time there was no scientific basis for the measures taken, which were arbitrary, irksome, and severly enforced. When scientific research showed the futility of such measures a procedure based on reason and aiming at the coöperation of the public with scientific control measures came to be the policy of the authorities.

Massachusetts was the first state to have a state board of health. The creation of such a body was recommended by the Massachusetts State Sanitary Commission in 1849 but was not authorized by law until the Act of 1869 (ch. 420). It was abolished in 1879 by the Act of 1879 (ch. 29) which Act established the State Board of Health, Lunacy, and Charity in its place. By the Act of 1886 (ch. 101) the State Board of Health was again provided for. It became the State Department of Health in 1914.

Act of 1907 (ch. 537) divided the State into fifteen districts. Each of these districts was provided with a state inspector of health whose especial duty was the control of communicable diseases. This seems to be a movement toward centralizing health administration, away from the old idea of leaving to the towns the matters that concern them. But the movement seems to be abundantly justified by the resultant tendency toward uniformity in quarantine measures. The number of districts has since been reduced to seven.

IV. DEFINITIONS OF TERMS AND OF TOPIC

The control of communicable diseases has evolved from the "quarantine" of the Middle Ages. That ancient term is still used but its meaning has changed. Broadly it may now be defined as referring to any restraint of human activities because of communicable disease, whether maritime or on land. The term is now most commonly used in connection with national measures which have for their purpose the exclusion from the country of the communicable diseases, more particularly cholera, typhus, yellow fever, plague and small pox. This quarantine is largely in federal hands, is well standardized, and does not actively interest the practicing physician, and will therefore not be included in this study. The general term quarantine in so far as it will be used, will include isolation and concurrent disinfection.

There are many public health laws which relate to water supplies, ice, sewage treatment, oyster beds, and pasteurization of milk, all of which deal to some extent with communicable disease control. But inasmuch as public health work with these diseases has changed in the past few years from one of strict attention to the environment to one of realization that the individual plays a very important rôle, that part of the subject which refers more strictly to community measures will not be studied here. Public health work on the environment has accomplished wonderful work, particularly in the enteric diseases, but the time has now come when individual work is more important than the few remaining other problems.

(To be continued)

Case Records of the Massachusetts General Hospital

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY
RICHARD C. CABOT, M.D., AND HUGH CABOT, M.D.
F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 12291

EPISTAXIS AND PURPURA—CAUSE?

MEDICAL DEPARTMENT

An Italian laborer thirty-five years old came to the Emergency Ward May 9. He had been struck on the head by a rock while working on a stone crusher. His skull and left eye were injured. There was also an abrasion over the lower ribs. Examination was otherwise negative. At operation extensive comminuted fractures of both plates of the frontal sinus and of the nasal bone were found. The dura was found to have been slightly lacerated in one region opposite the medial side of the left frontal sinus. The dura was not under tension. Good pulsation was present, and there was no suggestion of indriven bone in the brain.

The day of operation the urine showed marked gross blood; at two later examinations no blood and no albumin.

The patient made a good convalescence, with no complications. The left eye was blind. An eye consultant reported that the fundus was not visible because of hemorrhage into the anterior chamber. The right eye showed slight conjunctivitis. May 25 the patient was discharged. No blood examination was reported during this stay in the hospital.

After leaving the hospital he had constant severe frontal headache, sometimes generalized headache, and frequent bilateral nosebleeds. He was referred to the Eye and Ear Infirmary by the Out-Patient Department with advice that the left eye be removed. The eye was enucleated June 13. The diagnosis at the Infirmary was, "Perforating wound of sclera with intraocular hemorrhage". The right eye was reported normal at this time. The nosebleeds became more frequent.

For six months before his second admission, the March following his discharge, he had persistent cough with a little yellowish sputum frequently containing blood. His wife did not remember whether hemoptysis followed the nosebleeds. A week before his second admission he had a nosebleed lasting three days, finally stopping by pills packed into the nostrils. After this he suddenly became worse and remained in bed complaining of very severe frontal headache and a racking slightly productive cough. On the fourth day a physician said that he had high fever.

The history was given by his wife through an interpreter. She thought he had had no other illnesses, but no details of his past history could be obtained. Two of his seven children were said to have had moderate bilateral nosebleeds lasting fifteen or twenty minutes at the same time that their father's nose bled for three days. There was no statement as to other evidence of hemorrhagic diathesis. An eight-months-old baby had been ill for four days with fever and cough.

March 5 the patient was readmitted to the hospital.

Examination showed a well nourished young man with hot dry skin, obviously acutely ill. There were petechiae on the hands, the hard palate and the right conjunctival sac. The buccal mucous membrane was pigmented. The teeth were poor. There was pyorrhea. The apex impulse of the heart was in the fifth space. The action was regular and so very rapid that the murmurs could not be differentiated. There was an early diastolic at the base and a systolic all over the precordia. A systolic thrill was felt at the apex. The blood pressure was 140/40. The breath sounds were harsh and there were râles in the front chest and the axillae, and many râles at the left base and a few at the right. The respiratory excursion was greater on the right. The abdomen was distended. The left lobe of the liver was palpable and suggested more enlargement than the right lobe. The spleen was markedly enlarged to percussion. The edge was felt about three fingerbreadths below the costal margin. Traube's space was obliterated. Rectal examination was negative. There was clubbing of the fingers and toes. The right pupil was irregular; reacted normally.

The urine was red, specific gravity 1.018, a trace of albumin at the single examination, 5-6 red blood cells and 2-3 leucocytes per high power field. The amount was not recorded. March 5 blood examination showed 10,000 leucocytes, March 6 29,200, 72 per cent. polynuclears, 5 large mononuclears, 11 atypical large mononuclears, hemoglobin 70 per cent., 4,556,000 reds. The reds were normal. The smear showed one megalokaryocyte and one endothelial phagocyte. The platelets appeared reduced in numbers and large. A Wassermann was negative. Non-protein nitrogen 59 mgm. per 100 c.c. Blood culture showed staphylococcus aureus in both flasks. Coagulation time 47 minutes in four tubes, 10 minutes with calcium chloride. In all tubes the red cells had settled before clotting occurred. This was least evident in the tube with calcium chloride.

An X-ray plate was unsatisfactory on account of motion, so that a very early process might have been overlooked. There was no evidence however of consolidation in the lung.

The temperature was 106.8° the evening of entrance, 104.4° next morning. The pulse was 110-158, the respiration 36-59.

March 6 many purpuric spots appeared. The general condition was about the same.

That night the temperature went up to 109° and the patient stopped breathing. After twenty grains of caffein and a slush bath he revived. Early the next morning he died.

Discussion

BY RICHARD C. CABOT, M.D.

NOTES ON THE HISTORY

1. The fractures were comparatively unimportant, not getting into the brain. Presumably no hemorrhage was present.

2. How would one interpret that blood in the urine? Here is a man who has been bruised. He has probably had a bruise in his kidney. The twelfth rib goes right across it and in anybody who is bruised the twelfth rib may drive into the kidney without injuring the other tissues much, but enough to give him a hematuria which disappears. That is my guess. I do not know anything about the case.

3. I take it the left eye was not blind before the accident.

4. This patient was on the surgical side. On the medical side we examine the blood in every case.

5. Of course it is familiar that if a patient has had nosebleed, then coughs or spits up blood, it may be blood swallowed and regurgitated and have no special significance except as showing that he has had nosebleed. Of course it is regurgitated, comes up from his stomach and not from his lungs, but patients cannot always tell much except that it came up. They know it came from the mouth and that is about all they know.

6. This is a new way to me to use pills.

7. Before physical examination I think it is worth while to make some guesses,—we won't call them diagnoses. What should be in our minds with a man who has had headache and nosebleeds?

A PHYSICIAN: Hypertension, often associated with nephritis.

DR. CABOT: Yes. I do not say he has that, but it ought to be in our minds as we go on reading. Perhaps this man has a nephritis, with no connection with his injury, just a separate disease. Of course the cough and fever must be something separate.

8. This history was given by his wife through an interpreter. All records so given have to be taken with a little sodium chloride.

9. The nosebleeds seem to be catching. We can imagine all sorts of things. The father may have been annoyed and administered a little corporal punishment.

10. I should say we have very little evidence of hemorrhagic diathesis.

11. The baby had possibly some general infection which the father may have had also.

NOTES ON THE PHYSICAL EXAMINATION

There is pyorrhea in practically all the patients who come here. We pay no attention to it.

What about the blood pressure?

A PHYSICIAN: There is a low diastolic.

DR. CABOT: Yes; a big pulse pressure. What heart lesion does it go with?

A PHYSICIAN: Aortic regurgitation.

DR. CABOT: Yes. What are these râles, probably? Edema or congestion of the lung from back pressure.

I take practically no stock in the spleen being enlarged to percussion. If I cannot feel it I pay no attention to percussion dullness in the spleen. It turns out to be due to all sorts of other things besides spleen. Either feel it or know nothing.

Why did they make a rectal examination? On general principles. They felt that they had not completed the examination without it. There is not a thing in the case that I see to suggest it.

From the clubbing of the fingers and toes we infer that something has been going on for some time and presumably in the heart, because we have the murmur and a big pulse pressure. If he had a lung lesion that would explain it too. I guess that was due to his heart and I guess he has had it for some time, although nothing was found a year ago.

I cannot say anything on the basis of this urine examination. It might be a normal urine. It might be passive congestion of the kidney from heart disease. It might be nephritis, but no one could say so positively. We have to wait and see if anything else backs up the idea of nephritis. Otherwise we call it passive congestion.

"One endothelial phagocyte" means this: We have had at this hospital some remarkable cases of acute endocarditis showing in the peripheral blood as we get it from the ear a lot of phagocytes, that is leucocytes which were walking around and eating up everything in sight, other red cells, and sometimes other leucocytes. Why this happens we do not know. But in every case where we suspect acute endocarditis we now look extra hard in the blood for those cells. They found one. That is not of much significance.

The non-protein nitrogen is a little high. It is not much high, but above the normal. The normal runs up to about thirty-six.

We always take cultures in two flasks. If the organism comes out in one and not in the other we try it over again; it may have been contamination, especially if it gives a staphylococcus, which is so common in the skin. But they got this germ in both flasks, and I think we may take it that it was really in the blood and did not come out in the skin. Of course that is an all-important fact, if we take it as true, as I do.

Dr. Holmes, the X-ray expert of this hospital will demonstrate these plates to us.

Dr. Holmes: This is the plate taken at his last entrance. The first would be of value. The first examination states that the heart shadow is enlarged to the left. There is no statement about the aorta. I understood Dr. Cabot to say that there was no change in the physical examination at that time, that the examination did show some enlargement of the left side of the heart. Such an enlargement would be interpreted by us as either hypertrophy or aortic regurgitation of non-syphilitic origin. This plate is taken with a portable apparatus and a very sick patient. No attempt was made to get him to hold his breath, so things are blurred. We see the shadows of the hilus and lung markings. I do not think that could be interpreted as bronchopneumonia. There is also some enlargement of the left side of the heart. The supracardiac shadow is a little large here, but if we remember that the plate is taken from the patient's back and not in the position in which we like to get a heart plate, and also that the focal tube is nearer than it should be, we have to discount this. The ideal thing is a seven-foot plate and the fluoroscope. If the supracardiac dullness is enlarged it may be due to high blood pressure, arteriosclerosis, or a true aortitis such as we get in syphilitics. If this is rheumatic, and there is quite a group of rheumatic cases that we have had a chance to study lately, there has been no dullness in the oblique view. So that we are not justified in making any interpretation except that the heart is enlarged.

Dr. Cabot: You were not sure of any lung disease?

Dr. Holmes: No. There is no positive evidence of it in that plate.

Dr. Cabot: The additional knowledge then is of an enlarged heart, which we had reason to suspect and have more reason now to suspect, the possibility of some enlargement of the aorta though we are not sure, and negative lungs.

The respiration is very rapid.

Heroic efforts kept him alive a few hours but did not make any difference.

DIFFERENTIAL DIAGNOSIS

The first chapter of this case deals with his accident, with the fracture of the frontal sinuses and of the nose, with the injury to the left eye, with the injury to one of his kidneys. That is, as I see it, all done with. I do not think it has any bearing on the present illness. Then a year later we find him with high fever, with hemorrhages into the skin, with a diastolic murmur in his heart, delayed coagulation time, and apparently with a staphylococcus aureus in his blood. Those are the essentials. Secondary to them and less important are the enlarged spleen, enlarged liver and râles in the lungs which can easily be attributed to the same cause, namely passive congestion.

Those nosebleeds I thought of at first as very possibly due to nephritis, especially as he had a headache. Now, having read to the end of the case, it seems to me much more likely that they are associated with an acute infection, a staphylococcus infection, which I believe was the cause of his death. That gives us nosebleeds as well as hemorrhages under the skin.

How are we to account for the headache? I think by fever. This man had a stapylococcus septicemia which was implanted on the heart valves, especially the aortic, possibly on the mitral too, but we have no evidence of it. Subacute endocarditis then on the aortic valve, probably enlargement of the heart. Dr. Holmes says so. When the X-ray man says cardiac enlargement we find it post mortem practically every time. The spleen may be large just from the staphylococcus aureus infection, or there may be an infarct in it. We often find them in this disease. His kidneys may well have infarcts, because with loose vegetations on the aortic valve very likely some are dislodged and thrown down into the kidneys,—a very common place to lodge. I see no reason to suppose disease in the lung, stomach, bowel, nervous system, or in any other organs than those we have mentioned. I believe Dr. Richardson will say: Staphylococcus aureus sepsis, subacute endocarditis on the aortic and very likely on other valves, hypertrophy and dilatation of the heart, passive congestion of various organs such as the liver, spleen and kidney, infarcts very possibly here and there, the spleen and kidneys being the commonest place to find them. That is as far as I can go.

A Physician: It looks as if there might be some cerebral complication.

Dr. Cabot: Yes. He had a high fever and headache. That certainly does suggest cerebral complication. What might he have?

A Physician: Abscess.

Dr. Cabot: Yes, a cerebral abscess or embolism. Now let us see what is against it.

A Physician: He never had any paralysis.

A Physician: The record says the right pupil was irregular.

Dr. Cabot: Yes, but that is not much to gamble on for a diagnosis. There is no vomiting, no optic neuritis so far as we know, no change in the pulse. I am willing to make a bet that he will not show anything in his brain. I do not feel sure of it however.

A Physician: Why do you say renal and splenic infarcts?

Dr. Cabot: Because according to my hypothesis which I am following up pieces of that are likely to wash off in time and go and plug a vessel in the spleen and kidney, and that is an infarct. I say those because those are the most likely places.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Lobar pneumonia.
Acute endocarditis.
Aortic regurgitation.
Myocardial insufficiency.

DR. RICHARD C. CABOT'S DIAGNOSIS

Staphylococcus aureus septicemia.
Subacute endocarditis, aortic and?
Hypertrophy and dilatation of the heart.
Chronic passive congestion.
Infarcts of spleen, liver, kidneys.

ANATOMICAL DIAGNOSIS

1. *Primary fatal lesion*

   Acute ulcerative endocarditis of the aortic valve extending on to the aorta, the endocardium, and the anterior cusp of the mitral valve.

2. *Secondary or terminal lesions*

   Hypertrophy and dilatation of the heart.
   Chronic passive congestion.
   Infarcts of the spleen and kidneys.
   Hypertrophy of the spleen.
   Hyperplasia of the bone marrow of the femur.
   Purpura hemorrhagica.
   Edema of the lungs.

3. *Historical landmarks*

   Chronic pleuritis.
   Obsolete tuberculosis of the bronchial lymph nodes.

Dr. Richardson: The definite lesions in this case were as follows. He showed the purpuric spots scattered over him here and there. In scattered places over the peritoneum there were hemorrhagic areas. The stomach mucosa showed small scattered hemorrhagic areas. A few old pleural adhesions on each side. There was much frothy fluid and reddish mucus in the trachea and bronchi, indicative of some congestion or edema of the lungs. The bronchial glands were negative except that in two there were fibrocalcareous areas, obsolete tuberculosis. The lungs showed passive congestion.

The pericardium showed on the visceral layer small hemorrhagic areas. The heart weighed 430 grams,—considerably enlarged for him. There was moderate dilatation on the left, no definite dilatation on the right. The valve circumferences were as follows: mitral, 10 cm., aortic 7.5 cm., tricuspid 12 cm., pulmonary 8.5 cm. Those are practically natural measurements. Three of the valves showed nothing remarkable. The aortic was the seat of an extensive lesion. The aortic cusps instead of being definite cusps were crescentic fragments. Of course that valve could not close and there would be regurgitation. In addition to this the lesion on the cusps had a peculiar character. The crescentic fragments were thin and necrotic and frayed out at the margins. This is quite different from the viridans type of endocarditis. This case was a staphylococcus infection, and that is the type of lesion that staphylococcus may produce on the aortic valve. In addition to that there was a patch on the aorta of similar material, an aortitis. Not all aortitis is syphilitic. In addition again, the anterior cusp of the mitral, which is in relation with the aortic valve, showed a patch of vegetations extending from the diseased aortic cusps on to the posterior surface of the anterior mitral cusp. Opposite this on the anterior surface there was a small dark reddish area where in time there would probably have been a perforation.

The liver was large but showed no definite lesions. The spleen weighed 810 grams. Of course they should have felt that. It is four times enlarged, but the only thing in that besides acute splenic tumor associated with infection and infarcts is the "Mediterranean spleen".

The kidneys were large—445 grams—but other than for a few infarcts they were negative. There was no nephritis. The pelves showed a few small hemorrhagic areas. The mucosa of the bladder showed similar areas.

The bone-marrow showed some hyperplasia.

Microscopic examination of the acute masses on the aortic valve showed the staphylococcus aureus, and the other sections corroborated the gross appearance. There was a patch of vegetations, I should have mentioned, on the endocardium.

Dr. Cabot: Why did he have a hyperplastic bone-marrow?

Dr. Richardson: The bone-marrow may be hyperplastic in infectious processes.

Dr. Cabot: Of course this is an enormous subject, this subject of acute and subacute endocarditis. Its importance to us is chiefly from the point of view of prognosis. We cannot treat it in my opinion. I have never seen any treatment that seemed to me to do any good. But the important thing is to tell the family and not make light of it. The important thing is to know that the person is going to die. I have never known a recovery.

It is easy to make a diagnosis, given the facts we have here. That is, when we have a heart lesion plus a fever, plus emboli in the skin, plus a positive blood culture. That is almost too easy. But in most cases we do not have all four things,—especially we do not have the positive blood culture. That is just like throwing a fly into the stream. We don't get a trout every time we throw the fly. Blood culture is just taking blood in one place and one time. So a negative blood culture does not in the least mean that there are no organisms in the blood. There are one hundred negative for every positive one. We had good luck and got it here. If we had not got it our diagnosis would have been somewhat different.

Again, we often do not get these subcutaneous hemorrhages or any evidence of emboli. In other words, we often have nothing but fever and a heart murmur. With fever and a heart murmur we are always in trouble. We feel that it may be acute endocarditis, but we do not know, and so we must try to rule out every other cause of fever. If he has a heart murmur and a fever that we cannot explain as due to tuberculosis or to any local abscess or infectious process, if it is not due to hyperthyroidism, then we say, "Probably it is due to the heart". But we cannot be sure, and we have some bad hours on some of those cases. We are watching all the time, looking over every inch of the body for spots, and watching for positive blood cultures. It makes a difference if we are watching. If we know that the certainty of our diagnosis depends on finding one or both of those things, then we watch more carefully.

A Physician: What is the original source of infection?

Dr. Cabot: I do not know, and in most cases we do not know before or after death.

A Physician: Do you connect it with his injury?

Dr. Cabot: I do not believe so. It was a year after. I should say if we went over all our cases of acute endocarditis here we should find that in most of them we do not know the cause.

A Physician: Is that pulse pressure common in such a case as this?

Dr. Cabot: Yes. We often find that with aortic regurgitation. Dr. Richardson says this aortic valve will not hold. That is the commonest cause of big pulse pressure. First comes aortic regurgitation, second hyperthyroidism, third arteriosclerosis. Those are the three to remember.

A Physician: Was the head examined in this case?

Dr. Richardson: No, we did not have permission for that.

A Physician: Do you find any difference in the type of distribution of petechiae in the viridans and the staphylococcus?

Dr. Richardson: There are more in evidence as a rule in the viridans infections.

A Physician: The diastolic was low and the systolic very high. Is there any difference in the significance of the low diastolic with a very high systolic, or a high diastolic and high systolic? Is there any difference between a very high systolic pressure and an only slightly elevated one like this, with a low diastolic?

Dr. Cabot: Yes. This heart was a little enlarged, not much. In the cases you speak of the heart will generally weigh a great deal more.

A Physician: Did Dr. Richardson mean a chronic malarial spleen by "Mediterranean"?

Dr. Cabot: We have rather lost the habit of referring to chronic malarial spleen. At one time we called it "Armenian spleen". Now we do not know what it means. It may be malaria, it may be kala-azar, but we cannot prove that either. I think the best we can do is to say that most people who come to this country having lived around the Mediterranean, in North Africa or Asia Minor, have it, and if we were trying to make a diagnosis of typhoid fever in these patients we must not be fooled by a big spleen.

A Physician: You spoke of paying no attention to pyorrhea. Could that be a source of infection here?

Dr. Cabot: Not in my opinion. After seeing so many cases as I have seen in this hospital I do not believe that pyorrhea is the source of a blood infection. That is my opinion. I cannot prove it. I mean an acute blood infection,—one that we can spot and know we have it.

A Physician: What is your opinion as to the probable origin of the staphylococcus?

Dr. Cabot: We do not know, and that is where we usually are in cases like this. We generally don't know. We don't generally find a focus like an abscess.

A Physician: This might have been called a Banti's disease?

Dr. Cabot: It might have, because almost anything may be. But it ought not to be, because there is no anemia. We have no good right to make a diagnosis of Banti's disease without anemia. There is no good evidence of Banti's except the spleen, and the spleen was not enough.

A Physician: Was this a pure aortic regurgitation?

Dr. Cabot: I understand that it was. There was no stenosis at all.

CASE 12292

CHRONIC PULMONARY SYMPTOMS IN A CHILD; CAUSE?

Children's Medical Department

A two-year-old Italian boy was sent in from the Out-Patient Department October 13. The chief complaints were fever and cough of five weeks' duration. The history is unsatisfactory because of the parents' poor English. His father and mother were both living and well. He was normal at birth and had always been healthy. During the past year he had had infrequent attacks of acute indigestion, promptly relieved by castor oil.

Five weeks before admission the child became acutely ill, with fever and considerable cough. His appetite was poor and his bowels constipated. He had continued in unchanged condition.

Examination showed a poorly nourished baby looking as though he had been ill for some time. Skin pale and dry, with several scattered irregular areas of yellowish pigmentation on the face about the size of a ten cent piece, not raised. Post-nasal pharynx showed mucopurulent discharge. Throat and tonsils not remarkable. A few shotty glands on both sides of the neck. Chest expansion limited on the right, particularly posteriorly, where from the base upward to the angle of the scapula there was flatness on percussion extending almost to the midaxillary line. Breath sounds almost inaudible. Marked egophony. No râles. Above the flat area on the right side posteriorly was a band of exaggerated resonance and increased breathing. Left chest normal. Liver and spleen felt about 1.5 cm. below the costal margin. Knee-jerks active, equal. Slight clubbing of the fingers.

Temperature 98.2° to 101.7°. Pulse 95 to 170 during the first two days, afterwards 95 to 147. Respirations 70 to 23. Urine: a large trace of albumin and occasional leucocytes at one of five examinations. Specific gravity could not be tested. Hemoglobin 45 per cent., reds 4,160,000, polynuclears 43 per cent., leucocytes 14,600 to 23,000. Wassermann negative. Stools negative. Pirquet positive after eighteen hours October 19, negative (?) November 4. Chest tap October 18 gave 4 c.c. of bloody serous fluid; smear showed no pus or organisms. Sputum showed streptococci, fusiform bacilli, pneumococci and staphylococci. X-ray October 20 showed mottled dullness extending downward and outward from the right lung root and obliterating the outline of the diaphragm on that side. There was also considerable fine mottling around the lung roots on both sides and extending well out into the lung fields in both chests. The heart was not displaced. The bronchi were unusually prominent.

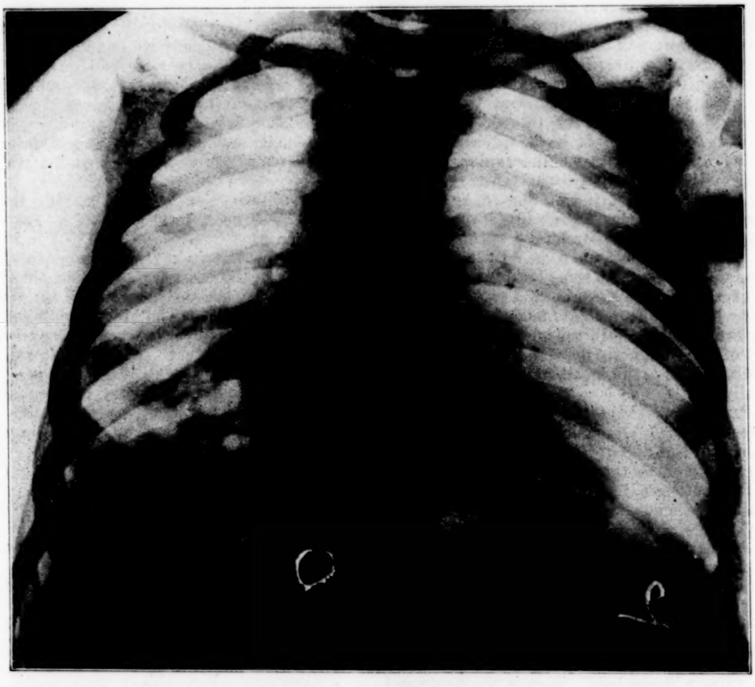

PLATE I. November 5, 1923. Shows mottled dullness extending downward and outward from the right lung root, and also considerable fine mottling around the lung roots on both sides. The process has cleared up considerably since October 20.

The morning after the entrance examination the lung signs had changed. The whole right side seemed less flat to percussion, and the breath sounds were much more easily heard and were bronchial in type. November 3 at a second chest tap 1 c.c. of thick pus was removed which showed diplococci and small rods. X-ray November 5 (Plate I) showed the process at the right base had cleared up considerably since the previous examination. Surgical consultants advised against operation. The lung signs remained as at entrance until November 9, when there was slight dullness from the fourth space to the base, changing to marked dullness toward the posterior axillary line. November 14 the signs were somewhat less marked, although the temperature had been somewhat elevated for two days. By the 18th it was normal, and continued so until the 23rd, when there was again slight elevation. November 25 the baby was discharged with the right chest only slightly clearer than on admission.

Records of the Out-Patient Department show that after leaving the hospital he felt well until one day he began to have spasmodic unproductive cough and a temperature of 100°. On examination December 2 he was coughing continuously. The nose showed seropurulent discharge. The tonsils were enlarged and injected. There were pea-sized glands at the angle of the jaw. In the right back from the eighth to the tenth ribs there was an area of dullness, increased tactile fremitus and inconstant moist râles. At visits December 5 and 10 he was no better, coughed much and vomited with the cough. The sputum was foul and yellow. December 14 he was much worse.

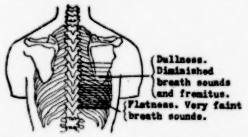
Dullness.
Diminished breath sounds and fremitus.
Flatness. Very faint breath sounds.

FIGURE 1. Chest signs at second admission.

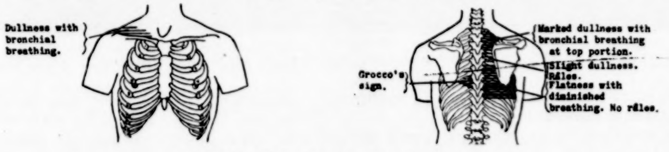
Dullness with bronchial breathing.
Grocco's sign.
Marked dullness with bronchial breathing at top portion.
Slight dullness.
Râles.
Flatness with diminished breathing. No râles.

FIGURE 2. Chest signs at third admission.

That day he re-entered the wards. Examination showed a fairly well nourished, sick and anemic looking child, with rapid and labored breathing. There was respiratory grunt interrupted by frequent paroxysms of cough productive of much light green material mixed with saliva. Throat reddened. Right chest limited in expansion. Chest signs as shown in Figure 1.

Temperature 97° to 102° with constant afternoon rise. Pulse 160 to 92. Respirations 52 to 20. Urine at entrance cloudy, a slight trace of albumin, rare red blood corpuscles. Leucocyte count at entrance 31,500.

The child coughed a great deal. The temperature and pulse fell, the cough became less and he seemed to improve. December 29 he again coughed more and there was a rise of temperature to 102° and of pulse to 155. X-rays January 10 showed practically the same appearance as at the last examination. He continued to cough and to run a temperature. He gained somewhat, but slowly. February 1 the temperature had been flat for a week and he had no cough. X-ray showed very little change since the previous observation. He was discharged February 2.

After leaving the hospital he felt very well until the first of March, when he began to have intermittent cough, not severe. March 25 he entered the wards for the third time. On examination he had frequent slightly productive cough. Tonsils and whole faucial ring enlarged and injected. Cervical glands slightly enlarged and tender. Entire right side of chest moved less than left. Signs as shown in Figure 2. The rest of the examination was as before.

Temperature 97.4° to 100°; after April 14 normal. Pulse 85 to 142. Respirations 41 to 20. Urine normal. Hemoglobin 60 per cent., reds 4,760,000, leucocytes 15,000-19,000, polynuclears 34 per cent., smear normal. Pirquet negative. X-ray showed very little change in the appearance of the chest since the examination in February.

April 2 the visiting physician found the venous circulation more prominent on the right and the breath sounds diminished on that side, with compensatory increase on the left. There was dullness in the right axilla as far as the midaxillary line. Resistance was also increased on that side.

April 18 the baby was discharged to a convalescent home.

After his discharge he did very well. He was in the convalescent home for an unknown period. He was discharged because of a record found at the Children's Hospital of acid fast bacilli in the stomach contents and suggestive X-rays. He gained in weight from 24 pounds upon discharge to 30 pounds a week before his readmission to this hospital, September 23. He had had no illness. He continued to have some morning cough with little sputum. Two weeks before his fourth admission he began to cough more than usual, especially in the morning, and to raise one or two tablespoonfuls of yellowish sputum. September 20 he had high fever and vomited two or three times. The fever continued until his admission September 23, with increased cough and rapid breathing.

Upon examination he was fairly well developed and nourished. Respiration rapid. Cheeks hot and flushed. Conjuctivae injected. Thin nasal discharge. Throat reddened and injected. Chest expansion more marked on the left than on the right. Right chest dull and showed many coarse moist râles. Right back dull from angle of scapula to base, with diminished resonance above. Many moist râles throughout right lower back. Heart rapid. Apical systolic murmur. Liver and spleen not felt. The rest of the examination was normal.

Temperature 102.4° to 105.6° during the first four days, afterwards 97.5° to 101°. Pulse 119 to 170 until September 29, afterwards 78 to 140. Respirations 33 to 63 for the first eight days, afterwards 18 to 50. Urine cloudy at one of seven examinations, very slight trace of albumin at another, specific gravity 1.018 to 1.022. Blood showed 52,000 to 9,600 leucocytes, 80 per cent. polynuclears, hemoglobin 95 per cent., reds 4,440,000, smear normal. Wassermann negative. Intradermal tuberculin strongly positive.

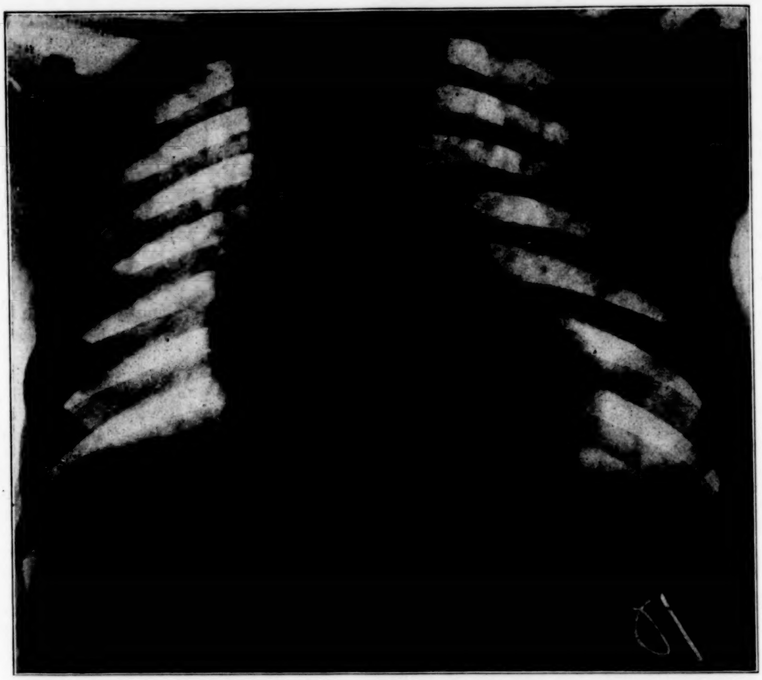
PLATE II. October 28, 1924. The lung fields are practically normal.

September 30 the chest was tapped, but no fluid was found. The child made steady progress. X-ray showed mottled dullness involving the lower two-thirds of the entire right chest. In the medial portion were many areas of irregularly diminished density. The outline of the diaphragm was not visible, but the rib shadows were not obliterated. By October 1 there was no fever and the general condition was good. October 8 there was amphoric breathing in the right front below the clavicle and at the fourth space in the midclavicular region. X-ray now showed the area of dullness at the right base considerably decreased since the last observation. The process was apparently clearing up. October 13 examination showed a robust contented child. The chest showed fair expansion, more apparently on the left, where the signs were normal. The right lung showed rather harsh breathing over the whole lower lobe from one finger breadth above the angle of the scapula to the base posteriorly and over a similar area anteriorly, especially below the nipple this type of breathing differed in pitch from typical bronchial breathing in having a softer respiratory tone and suggesting amphoric breathing. The percussion note was diminished in resonance in this area below the nipple, more resonant in the axilla. The intradermal tuberculin test was strongly positive.

October 15 bronchoscopy was done at the Eye and Ear Infirmary under ether. A baby Jackson bronchoscope was inserted through the cords and down the right main bronchus. An enlargement was met in the right main bronchus 9-9½ inches from the teeth and mucopus was encountered with a distinctly gangrenous odor and very sticky and thick, making clearance by suction difficult. A smear made from the pus showed pneumococci. October 20 the child was very active and playful. The temperature was nearly normal. He gained weight and to all outward appearances was in excellent health. The right lung showed the same signs. For the past thirty days his temperature had ranged from 98° to 100° by rectum, with a pulse of about 100, and respirations from 20 to 40. October 28 X-ray (Plate II) showed the lung fields practically normal.

October 30 another bronchoscopy was done at the Eye and Ear Infirmary without anesthesia. Some thick, tenacious, slightly blood stained material was sucked out of the right main bronchus. This did not have the same characteristic foul odor as that drained in the former bronchoscopy. A small amount of granulating tissue was seen partly occluding the bronchus. At the time of his discharge, November 13, the child's lungs were practically healed judging from the physical signs, except for very soft amphoric breathing over a small area anteriorly at the nipple much less in intensity and limited to a very much smaller area. The temperature was normal. The general physical condition was excellent.

After leaving the hospital he played actively during the day, but at night had severe coughing attacks. In the Out-Patient Department it was thought there were signs of consolidation around the area in the region of the right nipple and the lower angle of the scapula.

November 28 he entered the ward for the fifth time.

Examination showed no difficulty in breathing, no cyanosis, no dilatation of the nostrils. The throat was reddened and the tonsils were noticeably enlarged, with a small amount of exudate. The lungs were resonant except for some dullness at the right base posteriorly, where in a circular area about three inches in diameter at the lower end of the scapula there was amphoric breathing. The heart was normal. The rest of the examination was as before.

In thirteen weeks the temperature showed in general some afternoon rise, not usually above 100°. Three short periods of elevation reaching 102.9°-104.6°, December 4-7, January 15-19, and February 5-13. Pulse and respiration charts show corresponding curves. In general pulse 80-120, elevations reaching 148-200. Respiration at entrance 31-59, later usually 20-40; elevations reaching 51-60. Urine neutral at one of seven examinations, specific gravity 1.010 to 1.022. Blood showed 12,800 to 19,600 leucocytes, hemoglobin 95 per cent. Intradermal tuberculin strongly positive, both human and bovine. Throat culture showed streptococci. X-ray December 1 showed definite increase in the lung markings on both sides. In the region of the right base the lung markings were unusually prominent and showed mottling, and there were numerous areas of diminished density.

The child was kept in bed. On the second day the temperature came down to normal and afterward did not rise above 100° rectal until December 15. He coughed much less frequently and played very actively in bed. By December 12 he had practically stopped coughing and had had no nasal discharge. December 17 X-ray showed that the process had cleared up considerably. The child was allowed to play about the ward. January 2 another X-ray examination showed that the process had disappeared. Physically there were some signs of disorder in the right chest anteriorly—a patch of dullness just above and inside the nipple, and scattered râles in both sides of the chest.

January 4 the temperature rose to 102°, the following day to 103.9°. The lungs were clear except for the conditions noted above. An occasional dry crackle was heard. The throat was very congested and angry looking and the tonsils inflamed and cryptic. A throat culture showed streptococci. Over the area of dullness there was bronchovesicular breathing and the expiration was prolonged and close to the ear. January 9 the temperature was normal again. The signs in the chest persisted, and a loose cough developed which continued even in his sleep. He was put to bed again, as activity seemed to bring back the symptoms.

January 16 he complained of pain in the ears, more in the right. The drums were red and appeared to bulge. The temperature shot up to 104.7°, the pulse to 200, the respiration to 60. A left paracentesis gave serum. The temperature reached normal January 22. The cough however persisted, though it was less. By January 25 he was himself again, with very little cough. At the angle of the right scapula there was a dull area with coarse crackling râles, bronchial breathing and increased fremitus. All of these signs with the exception of the dullness disappeared after repeated breathing and coughing.

Beginning with the 24th he again ran a slight temperature. There were moist râles in the dull area in the right back. February 9 the temperature reached 104°. The right ear drum showed some redness and bulging. The left ear marks were so distorted that the condition was not recognized, although there was some pathology present. X-ray showed distinct increase in the root shadow on both sides. The larger lung markings were quite prominent. There was coarse mottling extending out from the hilus on both sides, particularly marked in the region of the right base, which appeared slightly less radiant than the left. There was distinct increase in the supracardiac shadow. February 14 the temperature and respirations were normal and the child was like himself again. February 27, 1925, he was discharged to a tuberculosis sanitarium.

The sanitarium reports that he remained until November 8. State on admission, hilum tuberculosis. Condition on discharge, apparently arrested. Intracutaneous tuberculin positive. Schick test positive and immunized. Weight on admission 28½ pounds, on discharge 55¾ pounds. Physical examination negative. X-ray showed left hili enlarged. He had several short colds during residence, and a small abscess of the neck which was incised and healed. Otherwise the temperature and pulse were normal during his entire residence.

After going home he was well except for cough.

He visited the Out-Patient Department November 16. He had coughed for a week. There was nasal discharge. The temperature was 99.2°. The left lung showed some impaired resonance along the spine. The right lung showed crepitant inspiratory râles over the greater part of the lung area and rare musical râles. The breath sounds were increased. November 24 X-ray showed both apices now clear. There was still some mottling around the hilus regions extending downward into the lung fields. The right apex was a little less radiant than the left. The plate was not entirely satisfactory. November 30 another X-ray examination confirmed the previous observations. There was some thickening of the root shadows. The lung fields were apparently clear. December 2 he had been vomiting after eating for three days and after the vomiting was tired and weak. His appetite was very poor. He had lost half a pound in two weeks. He coughed during the day. On examination the lungs were as before.

December 7 he entered the wards for the sixth time.

P. E. Well developed and nourished. Tonsils large, red, pitted. Pharynx red and moist. Submaxillary nodes just palpable. Lungs resonant throughout except for an area 7x7 cm. of impaired resonance with fine and coarse râles and bronchial breathing about the outer rim and suggestive amphoric breathing in the center. Small umbilical hernia. Inguinal nodes palpable on both sides.

Urine negative. Hemoglobin 80 per cent., leucocytes 11,500, polynuclears 56 per cent., reds 4,304,000, smear normal. X-ray December 8. No change since last observation in November. Chest essentially clear.

Two days after admission the chest findings described above were not found. The chest was resonant, and no râles were heard.

The rest of the history is given in the discussion.

DISCUSSION

BY GEORGE W. HOLMES, M.D.

I selected this case for two reasons,—first because it gives an opportunity to discuss a question which it seems to me has not been given sufficient attention in Boston, and second because it illustrates the amount of work that can be done on a given case without arriving at a diagnosis. Perhaps if we had got together we could have made a diagnosis. I think if I try to prove my case and then let Dr. Talbot take the other side it will not take so much time as the usual method of presentation.

I want to call particular attention to the child's age, two years. He apparently gave a history of illness which might have been a pneumonia. It was an acute illness.

Limited expansion on the right in a child two years old I think is an important observation.

Slight clubbing of the fingers would not come from acute pneumonia.

There is rather a wide variation in leucocyte counts.

The first X-ray plate I think agrees pretty well with the clinical findings. In the X-ray interpretation of the first observation a very important point is not mentioned. That is, the entire right chest is much smaller than the left, confirming the clinical observation of limited expansion. This plate was taken on full inspiration. There is an area of dullness with its apex at the cardiohepatic angle. It has a mottled character and probably represents consolidation of some kind. The diaphragm is visible, the costovertebral sinus is practically clear. One would not expect to find fluid with such a picture.

We cannot account for the marked decrease in the size of the chest without at least suspecting something blocking the bronchus. That is, an ordinary pneumonia, either lobar or broncho, would not cause such a diminution in the size of the chest.

The very rapid change of the lung signs is also, I think, a very important point.

I do not know where the pus could have come from in the second chest tap unless they got into the lung. There was no evidence of it in the X-ray.

In other words he had a process which cleared up considerably while he was in the hospital, and then he had a recurrence of a similar nature. That is continuous throughout the history; in all he had four such recurrences.

If he had been sick with tuberculosis, for instance, for that length of time we should not expect him to be "fairly well nourished".

He had two strongly positive tuberculin tests.

I should like to ask if there was any granulation found at the time the bronchoscopy was done. The record does not state whether they found any granulations in the area where the dilatation was or not.

On October 30 there is a note of granulating tissue partly occluding the bronchus. That is an important observation, because Jackson states that granulation tissue is usually present with a foreign body.

Within a month he had an X-ray which showed a process in the lung and one in which it had entirely disappeared.

This boy first came to the hospital in 1923. His last visit to the Out-Patient Department was in November of this year.

Before showing his X-rays I want to show some more typical X-rays to bring out the point which I wish to make. Here is a normal person with plates taken at different phases of respiration. Even men who are doing X-ray work hardly realize the extent of change that we get in the lung with the different phases of inspiration. This plate is at full inspiration, and shows a normal, well illuminated lung. Here is the same chest during quiet breathing. Notice the difference in the size of the lung fields and the amount of brilliancy in the chest. Here is the same person at full expiration. One would hardly recognize it as the same chest. Now when we take plates of a small child it is not possible to get them at full expiration and full inspiration. We have to take them when we can get them, and do not always know when we have full expiration or some phase in between. So that in judging the plates of children we have to keep this fact in mind, that the plate may be taken at any phase of respiration.

While it is pretty generally known that opaque foreign bodies are usually demonstrable by X-ray, it is not so generally known that non-opaque bodies can be demonstrated, or what those signs are. Here is a case of a non-opaque foreign body. At first glance I think many of us would suspect that the trouble is in the right lung. The right lung is much less radiant than the left. But on the left side there is an area of consolidation. That was not correctly interpreted at the time it was made. This child was taken at the phase of expiration.

This is the same child taken on a different date, at the phase of full inspiration or very near it, and we notice that the left is still a little more bright than the right, but it is a pretty negative chest.

Here is the child at full expiration. Now the left lung is just as bright as it was before,—more so perhaps—whereas the right lung has changed a great deal, showing that we have a good flow of air in and out of the right lung, but a partial blocking of the bronchus of the left. The lung is blown up. The diagnosis of non-opaque foreign body was made on the X-ray and the history. He had a bronchoscopic examination by a very good man, and no foreign body was found. I felt so sure of it that we advised him to go to the source of greatest authority in Philadelphia, and a foreign body was removed from his bronchus.

It is very difficult in many of these cases to find the foreign body, and a negative bronchoscopic observation does not always mean that there is not one present.

Here is the first plate of our present patient, and here is one taken about a month later (Plate I) showing a decrease in the process. The third plate was taken at a later period, and shows that the process has rapidly got larger. All the time this chest is smaller than the other. Whether the chest is blown up bright, as it was in the plate I have just shown, depends on how much the bronchus is blocked. If the blocking is complete we get decrease, if partial we may get a blowing up. In the fourth plate the process is clearing up. In the fifth it is still clearing up. In the sixth it is going bad again, and if we follow through the history we find that his condition in the wards ran pretty much the same.

In about six months after the first examination it looks like a normal chest. I do not believe that if the first process had been tuberculous it would have cleared up.

In this plate it is back again as bad as ever. This is a poor plate, but it is evident that the process is about as bad as it was the first time.

In the next (Plate II) it has cleared up again to some extent, or is practically all gone, but the lung is never completely expanded. The right lung is still smaller than the left.

In this plate there is another mass, and the mediastinal contents are displaced a little to that side. Here it is clear again.

This is when he came in in February 1925. We did not get quite so much reaction as we had in the first. This is about the time he was in the sanatorium with no physical signs. There was some mottling, which I think might be explained by the chronic infection. They interpreted it as tuberculosis.

Here he is at the present time. His left chest is still smaller than his right.

How can we explain the decrease without any fibrosis in the lung on any other basis than a partial occlusion of a bronchus? I have looked over the literature a little and talked with some of the other men, and reviewed some of my own experiences. I have never seen a child with lung abscess who had not been operated on for a nose or throat condition. I have never seen a child of this age with bronchiectasis except with foreign body or syphilis. I may be wrong, but it is certainly not very common. I think tuberculosis in a child of this age is usually of the so-called hilum-glandular type, or it is of the miliary type, which kills usually. It does not seem to me that this child would have lived so long. To my mind there is nothing but a foreign body to explain the condition,—one of the first things we should think of in any such condition in a child's chest, and as in this case, it often happens that it is the last thing to be thought of.

Dr. Cabot: Looking at the child's back now one would not get anything like what we get from X-ray of the difference between the two sides. I think it does look a little bigger, but nothing like so much.

Dr. Fritz B. Talbot: I think this illustrates one of the great difficulties we have in taking care of children, that is of getting as accurate data as it is possible to get in the adult. Of course the positive tuberculin test does not necessarily mean tuberculous disease. It can be depended upon to mean a tuberculous infection, but it is not necessarily disease. In my experience, if we get a positive tuberculin in a child under a year he rarely lives. A positive tuberculin at two years or more practically means that some tubercle bacilli have got into the body, but does not necessarily mean that he is sick with the disease of tuberculosis.

I do not see how we can controvert Dr. Holmes's arguments. It seems to me that we have to prove that the diagnosis that he has made is not correct. We have made two attempts, and those two attempts were unsuccessful.

There is one thing that Dr. Holmes's evidence has told us. As I remember hearing Dr. Chevalier Jackson of Philadelphia, there is some peculiarity of the diaphragm on the affected side. Isn't the diaphragm fixed on the affected side in foreign body by X-ray?

Dr. Holmes: Not necessarily. It would depend on whether he had a complete or a partial block. If there is any air getting into any part of the lung the diaphragm may move.

Dr. Talbot: Isn't the diaphragm higher on the affected side than on the healthy side?

Dr. Holmes: Yes. If there is marked block the diaphragm will be high. If there is a ball valve effect the diaphragm will be low.

Dr. Talbot: I think this sort of resumé in a case as obscure as this is a very valuable thing to make. I do not see how we can get away from the idea that there may be a foreign body here. Some of the features of the case are confusing. For example, on March 25 it looks as if he had started in with a fresh cold. There is no question that on January 16 he had a fresh cold and otitis media. There is no question that if the original disease had been tuberculosis that X-ray plate with the cleared lungs would be an impossibility. And I should think that plate would absolutely rule out tuberculosis of the lungs as the cause of the disease. The physical signs here at various times have been those of small abscesses of the lungs. The first description was a characteristic one of fluid in the chest, and we were much confused by the fact that we did not find sufficient fluid to explain the signs. At various other times the physical signs without the help of the X-ray have been signs of small cavities, and with the foul-smelling pus would suggest lung abscess.

I would add one other possibility of lung abscess in a child of this age, and that is that I think it did occur during the "flu" epidemic, but I have not seen it elsewhere in other epidemics.

Dr. F. E. Motley: The case was sent over to the Eye and Ear Infirmary as a possible case of lung abscess following pneumonia, and was worked on by a lot of us. It was not exactly in a quiescent stage at that time, and no particular effort was made to look for a foreign body.

Dr. Holmes: What do you think he has now?

Dr. Motley: I think you are right—it is a foreign body.

Dr. Edward D. Churchill: I have followed the course of this boy's disease with considerable interest, and think that the question may well be asked whether enlargement of the hilum lymph nodes could produce this picture. I agree absolutely with Dr. Holmes that there is no lung abscess and no bronchiectasis. But in considering why a lung deflates and why it inflates with bronchial obstruction it is a little inaccurate to speak of the ball action of the foreign body. It is due, as Dr. Jackson has shown, to increase in the bronchial lumen during inspiration and diminution during expiration. We therefore do not have to have an intrabronchial obstruction to produce either deflation or hyperinflation. Wessler and Jacques in their textbook show deflation in the upper lobe and hyperinflation of the middle lobe of the same side in a case of hilum tuberculosis. So we have this evidence to show that bronchial obstruction due to tuberculous glands may give the same picture that a bronchial foreign body gives.

Then while a foreign body may shift about and inflate one lobe today and obstruct another tomorrow, I do not know whether it would do it over a period of years. It seems to me, considering the pathological nature of the process, that when a foreign body is so embedded as to produce atelectasis over a period of months it would be very apt to be lodged there and not shift about for years. So I would not be entirely committed to the idea of a foreign body in the bronchus. I think it is perfectly possible to picture a large lymph node at the hilum which causes bronchial obstruction by enlarging with secondary infection, and then subsequently subsides. To me that is a logical mechanism, although I have not seen such a thing at necropsy.

Dr. Talbot: There is this to be said in regard to what Dr. Churchill has said, that if we look through the history we find that I have jotted down here at several times that there was spasmodic unproductive cough. That may be present with enlargement of the bronchial glands. I think it was Dr. Holmes who taught me that with acute infections the bronchial nodes will be enlarged. I have jotted down here on the first page, twice in the second page, and once in the third page, fresh colds, and the second time on the third page ears, which we would naturally call fresh cold. Then on the fourth page he has had several other colds during his stay in the sanatorium.

A Physician: May I ask if he has had intensive sunlight and that sort of thing? If Dr. Churchill's surmise is correct might not that be a possibility?

Dr. Talbot: I do not know that he has. I think the question at the present moment is whether he has a foreign body or not.

Dr. Holmes: You may be interested in his temperature. He has run a rather typical temperature, it seems to me, a high temperature and a high white count, like an acute infection.

I accept Dr. Churchill's criticism about the ball valve mechanism. I used that because it is a general term to describe it, and I know that it is due largely to spasm of the bronchus. It seems to me first that it would be rather difficult to explain the amount of pneumonia in the lung by the pressure of a bronchial gland. That is, there must at least be pressure enough to occlude it. Once drainage is stopped from any cause we get infection and peribronchial pneumonia. We have to admit that. I think that he has had a peribronchial pneumonia in each one of these attacks. That condition happening from pressure of a gland is extremely rare. Whereas foreign body in the bronchus of a child is not uncommon—much more common than we are apt to think. We are probably missing them every month. In a child of this age with such a history I think it is the first thing we should think of. The X-ray department did not think of it for a year.

A Physician: At the Children's Hospital acid-fast bacilli actually had been found. Do you think we have passed over that too rapidly?

Dr. Talbot: I cannot see how we can have this series of X-rays and have an acute tuberculosis present. I do not see how it is possible.

Dr. Holmes: I do not see either how he could have a bronchial gland large enough to press on the bronchus and give an X-ray like that. We ought to be able to see the gland. I have never seen obstruction of the bronchus due to pressure from bronchial glands, but I suppose it would be possible. Dr. Churchill has spoken of cases in which that is known to have occurred, and I know they have been reported. But I have never seen it.

Dr. Churchill: But isn't it just as hard to look at this plate and think that there has been a foreign body in that bronchus for three years?

Dr. Holmes: No. I think that a foreign body does remain pretty constant after it has been there a long time, as you have said. A fresh one may jump around considerably, but after it has been there a long time it does not. It tends to drop lower in the bronchus. But the pneumonic changes that take place in the lung are constantly recurring processes, and when they have not the pneumonia there is nothing to see except the interference with the aeration of the lungs. We can have a dilated bronchus or a completely occluded bronchus which would show nothing by X-ray except the changes in the density of the lung, and that is the very thing that Jackson and Manges have pointed out in so many of their papers.

Dr. Gerardo Balboni: Would it be possible to have a tuberculous gland rupture into the bronchus, give this picture, and clear up?

Dr. Holmes: I think that would be possible. I do not think he has any symptoms of it. He does not look tuberculous to me. He has a good color and is well nourished.

Dr. Talbot: I think the greatest argument against its being tuberculosis is that he is still young and is still alive. He has however had good medical attention, has been in favorable surroundings. I think last year he received some ultra-violet light when he was in the ward.

Further History

By advice of a throat consultant the child was transferred to the Eye and Ear Infirmary for bronchoscopy December 17.

REPORT OF BRONCHOSCOPIC EXAMINATION
BY D. CROSBY GREENE, M.D.

I examined the patient with the bronchoscope on three occasions; December 19, 1925, January 2, and January 30, 1926.

At the first examination the findings were as follows: a definite cicatricial stricture of the right primary bronchus just below the orifice of the upper lobe bronchus. The mucous membrane showed slight congestion and swelling. No pus was seen in the bronchus and no granulations at the site of the stricture. The lumen was narrowed down at the stricture to a diameter of less than two millimeters.

I dilated the stricture slightly and injected 15 cubic centimeters of lipiodol into the right bronchus. X-rays taken immediately after this showed the stricture clearly and also brought out clearly the presence of bronchiectatic cavities at the base of the right lung. (Plates III and IV.)

At the second examination, January 2, 1926, the stricture was dilated further and a bronchoscope four millimeters in diameter was passed through the stricture. Lipiodol was injected as before and X-rays were taken immediately afterwards. (Plate V.) Comparison of these pictures with those of three weeks before showed the degree of dilatation accomplished.

At the third bronchoscopy an attempt to dilate still further the strictured bronchus resulted in a rupture of the bronchus and a pyopneumothorax, which however appears to have done no permanent damage.

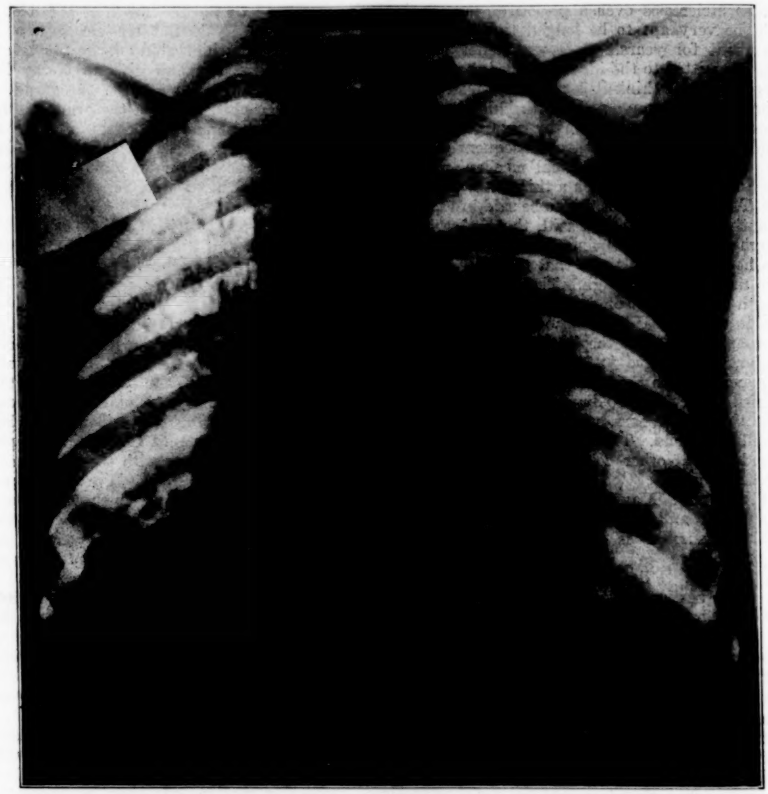

PLATE III. December 19, 1925, after lipiodol injection. Shows stricture of the right primary bronchus just below the opening of the upper lobe bronchus. Large bronchiectatic cavities are shown at the base.

Comment: The bronchoscopic findings in this case would indicate the occurrence of an old healed ulcerative lesion at the point of stricture. Such a lesion might have been caused by a foreign body or by a perforating tuberculous peribronchial lymph node. I believe the latter explanation is the more likely. Although failure

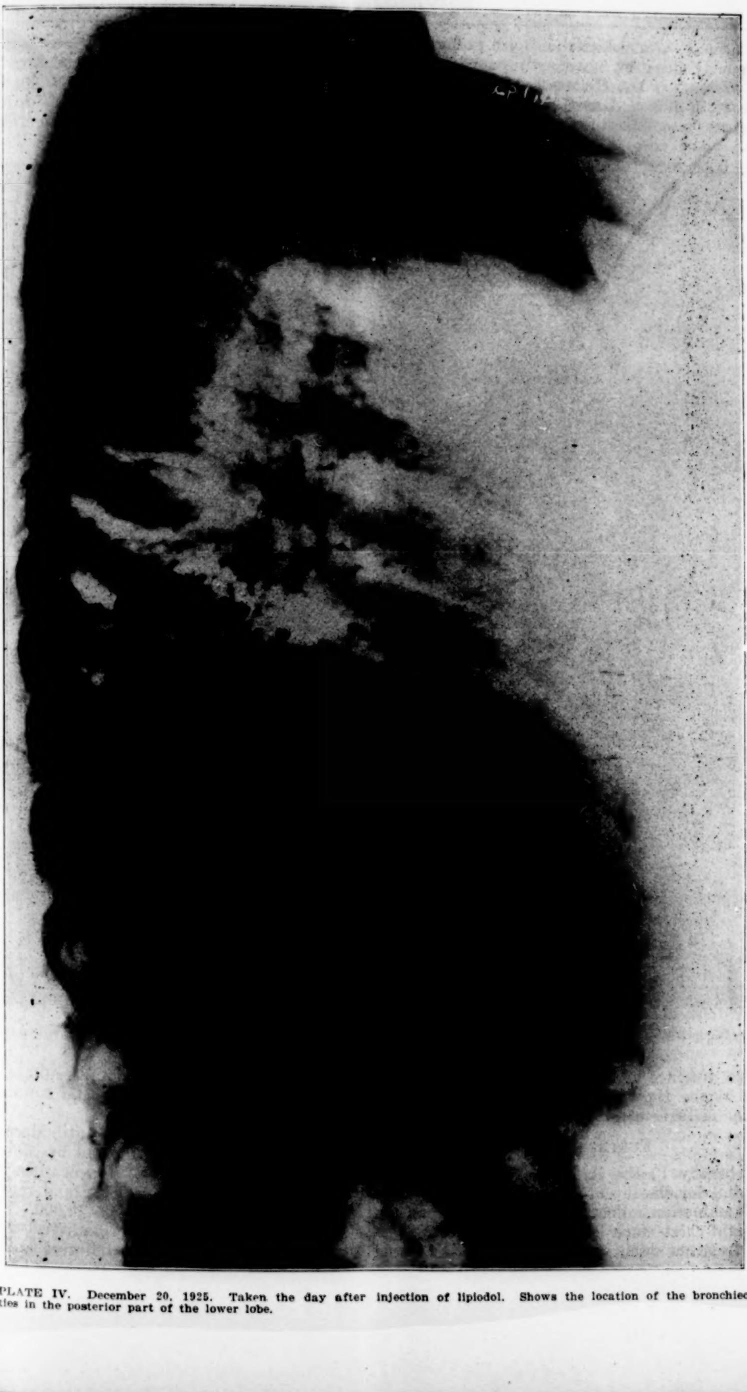

PLATE IV. December 20, 1925. Taken the day after injection of lipiodol. Shows the location of the bronchiectatic cavities in the posterior part of the lower lobe.

on the part of the bronchoscopist to find a foreign body does not necessarily prove that it is not present, as Dr. Holmes has pointed out, the absence of pus and granulations at the site of stricture is against the foreign body theory.

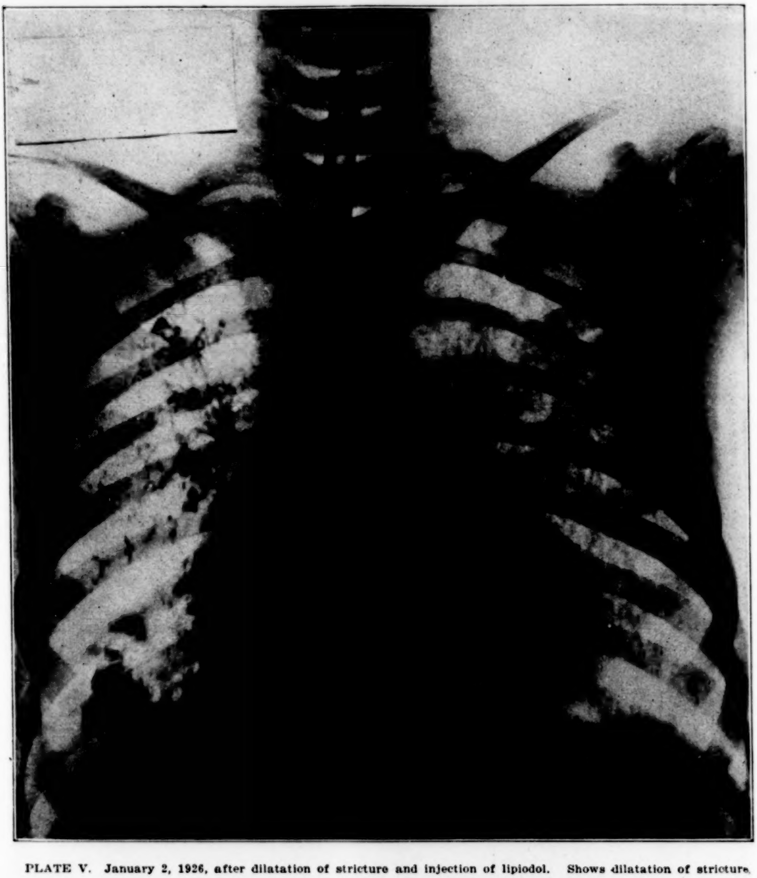

PLATE V. January 2, 1926, after dilatation of stricture and injection of lipiodol. Shows dilatation of stricture.

The presence of bronchiectatic cavities at the base of the right lung is demonstrated by the X-ray pictures after lipiodol injections.

FURTHER HISTORY

February 10 the child was admitted to this hospital for the seventh time.

Examination. Poorly nourished. Expansion of right chest much less than that of left. Tactile fremitus absent at right base and decreased at right upper lobe. Percussion dullness at mid-right chest approaching flatness toward base. Breath sounds much decreased and appear to be distant all over the right chest. No definite bronchial breathing made out. No râles at right. A few scattered median crepitant râles at left. Abdomen slightly spastic toward the diaphragm at right.

Temperature 98° to 104.6° until March 16; afterwards not above 100.1°, and by March 30 normal. Pulse 85 to 164. Respirations 23 to 61. Urine normal. Hemoglobin and reds normal, leucocytes 13,800—42,400—12,000. Tuberculin, human negative, bovine positive. Culture from chest fluid, six throat cultures and four nose cultures negative. One throat culture showed pneumococci. Schick test negative February 23. Dick test positive March 6.

X-ray February 18. Entire left chest diffusely mottled with multiple small areas of increased density, probably representing lipiodol within the alveoli of the lung. Right lung practically completely collapsed. In the right lower chest were several shadows of increased density representing lipiodol, the appearance of which suggested that it might be within the pleural cavity. March 30 the lung was apparently still collapsed. Some of the lipiodol remained in the right lower bronchus.

The child had some cough. February 24 he was very ill, with rise of temperature, pulse and respirations and pain in the right chest, which showed râles throughout. He had a great deal of cough and sputum. At a chest tap February 25 no fluid was obtained. The temperature showed some afternoon rise. The right chest was more prominent than the left. The heart was pushed toward the left, one centimeter outside the nipple line. At a chest tap March 9 20 c.c. of air was withdrawn. There was no untoward change. Lamp treatment was continued. March 22 the temperature was down and the condition good. March 29 there was sudden pain at the right side of the chest. April 1 the child was discharged to a tuberculosis sanitarium.

LATER NOTE

A report from the sanitarium two months later states that the child had made good improvement. Two weeks after admission he had irregular elevated temperature, not accounted for. Since that time he had been afebrile, with good appetite and digestion, very little cough and no sputum, and had played with the other children up to five hours a day. His weight was normal. The irregular shadow near the base of the right lung field had cleared up since admission. The very dense shadow at the apex was still present.

DIAGNOSES IN WARD

Fifth Entry: Tuberculous bronchial glands? Lung abscess? Bronchiectasis?

Sixth Entry: Foreign body in lung?

Seventh Entry: Hydropneumothorax.

DR. GEORGE W. HOLMES'S DIAGNOSIS

Lung abscess? Bronchiectasis?

CASE 12293

AN UNEXPECTED FINDING IN A CASE OF A SUCCESSFULLY TREATED HERNIA

Surgical Department

A married American woman thirty-eight years old entered for the first time twenty-eight years before her final admission, and was operated upon for rectocele and cystocele. No physical examination is recorded. There was considerable leucorrhea. In August, five years later, she reported that she felt well for a year after the operation. Then her uterus came down. She had two possible miscarriages soon after the operation. At the time of the report she wore a pessary.

January 15, twenty-three years after this note, she re-entered through the Emergency Ward. The complaints were pain and swelling in the lower abdomen of six hours' duration.

Following a ventral suspension (?) done eighteen years before her readmission she had some herniation through the scar, always reducible. For the past eight years she had had some pain in the back radiating around on both sides. For the past two years this had been absent until two weeks before readmission. Since that time it had been moderately troublesome. The evening of admission she took two aspirin tablets for the pain and immediately afterwards vomited. While vomiting a lump appeared in the lower end of the abdominal scar and persisted, accompanied by increase of the pain in the back and sides. A physician made a brief attempt to reduce the lump, gave her morphia and sent her to the hospital. In the Emergency Ward her temperature was 98.6°, her pulse 84, respiration 23, urine negative, leucocytes 14,000.

No other history was obtained.

Examination showed a well nourished elderly woman in considerable pain. The skin was dry and wrinkled. Over the bridge of the nose was an area the size of a dime looking like chronic inflammation. The remaining teeth were fair. The heart was normal except that the sounds were of fair quality. The lungs were normal. The abdomen was fat. A little to the right of the median line, low in the abdomen, was a scar, part of which showed fullness and herniation. At the lower end of the scar was a firm, hard, somewhat tender lump the size of a baseball, somewhat lobulated. Peristalsis could not be seen or felt over this mass. Over an area the size of a five-cent piece the skin over the mass was cyanotic, markedly so in the center. Separate dilated venules could be made out. Pelvic examination showed marked rectocele. The cervix was freely movable without pain, but was retroflexed. The fundus was not made out.

The urine was slightly cloudy at one of three examinations, specific gravity 1.025-1.030, a slight to a very slight trace of albumin at two examinations, a large trace to the slightest possible trace of sugar at all three; sediment, 1-5 leucocytes at two, loaded with hyalin casts at both and with coarsely granular and cellular casts at one.

Operation was done the night of admission.

She seemed fairly well next day. There was some distension partly relieved by enema. A stomach wash gave four ounces of brown liquid. A subpectoral of 2000 cubic centimeters of saline was given. She was examined by a medical man, who could obtain no history of cardiac or respiratory symptoms. The heart was not enlarged. The sounds were clear and there were no murmurs. The vessels were not sclerotic. The lungs were resonant in front; breath sounds vesicular. Expiration was prolonged (slight emphysema). There were no râles in the front or the flanks. The back could not be examined.

January 19 a second operation was done. Next morning she was better, though the distension was little relieved. She was given a sixth of a grain of morphia every three hours. January 21 she was distinctly worse, coughing a good deal and breathing with an asthmatic wheeze. The pulse was fair and not increased in rate. The temperature was 101°, the non-protein nitrogen was 50, blood chlorides 500, blood sugar 133. The leucocyte count was 19,400. Another medical consultant found increased respirations, slight cyanosis of the ears and finger tips, nothing abnormal over the right front except for pipes and squeaks; in the left axilla showers of fine moist crepitant expiratory râles not disappearing with cough. Over the right base there was a small area of tubular breathing with fine inspiratory râles. The heart was negative.

During the next two days she improved steadily. January 25 she was much better and had three good bowel movements with enemas. Inhalations helped her. She was able to take soft solids. January 27 her bowels moved three times voluntarily. The tube was removed. The wound about it was slightly septic. January 29 she was rather stuporous and considerably dehydrated, because practically all her fluid intake leaked through the incision. The wound showed considerable irritation and discharged partially digested food. January 31 she was put on suction. The urine showed a slight trace of albumin, many leucocytes, occasional red blood cells. The wound was strapped at the upper end. The chest condition seemed to be her chief trouble. February 1 the left chest was dull in front, with fine râles and bronchial breathing, and dull at the base posteriorly. In the right axilla was a to-and-fro friction rub and a few fine moist râles. The suction worked well and kept the abdominal wall fairly dry. She gradually weakened. February 2 she died.

DISCUSSION

BY EDWARD L. YOUNG, JR., M.D.

When a patient with a rectocele and cystocele has a complete operation there should not be prolapse of the uterus five years later except in the face of some unusual circumstance. When, however, only a repair below is done and no abdominal suspension it often gives way. That is apparently what happened here, and I should imagine that sooner or later she would come to a second operation. Apparently this happened, because the trouble for which she comes now is trouble in the abdominal scar. It is very hard to say what is the cause of backache very often, but we know that fatigue in one form or another is the commonest cause, and in this case it would seem as though the poor body mechanics due to a ventral hernia might have been at the bottom of that. The sudden appearance of the lump and vomiting gives us a strong basis for the diagnosis of strangulated hernia. The lack of temperature and pulse does not rule out entirely an infectious process such as appendicitis, but is more in favor of obstruction. A leucocytosis can be present with any intraperitoneal process which is causing peritoneal irritation.

The examination is very suggestive of strangulated hernia, and on that basis the only thing to do is to operate at once. Although obstruction alone can be present for a number of days and still allow for a successful operation, strangulation can be present only for a few hours in many cases without causing so much damage that a fatal outcome will take place in spite of any treatment.

The only thing of importance in the urine is the slightest possible trace of sugar and casts, because those must come by the kidney and can not be contaminations from vaginal secretions.

The operation was done, I assume, on the basis of acute intestinal obstruction, and so far as the story goes I see no other diagnosis we are justified in making.

DR. YOUNG'S PRE-OPERATIVE DIAGNOSIS

Acute intestinal obstruction.
Strangulated hernia.

PRE-OPERATIVE DIAGNOSIS

Strangulated ventral hernia.

OPERATION JANUARY 15

Under local novocain anesthesia an elliptical incision was made over the strangulated hernial mass and dissection carried down to the fascia all around. This ellipse of skin was then excised from the surface of the sac and dissection carried up to the neck of the sac on all sides. The constriction was then cut. The sac was opened and found to contain a loop of small bowel 6-8 inches long and a large mass of omentum. The bowel was discolored and there were a few hemorrhagic spots on its mesenteric side, presumably thrombosed vessels, but there was no question but that the bowel was viable. The omentum was adherent to the sac at many points. These strictures were freed up, returned to the abdominal cavity, and the sac excised. The defect was then closed.

FURTHER DISCUSSION

The operation speaks of one thing which is of very great importance, and that is the suggestion of beginning mesenteric thrombosis. This is often present in this condition, but it generally does not progress, and lateral circulation is enough to make up for any slight damage. But it must be borne in mind that in a certain small percentage of cases the thrombosis will continue and be serious. The other thing to think of is this. There may be other adhesions present from the old operation, and although the main damage was relieved the congestion attendant on the acute condition may make other areas shut down. We get the information in the next paragraph that things were not right, but we are not told just what was wrong, so that the only guess we have on the second operation is that the obstruction had not been relieved and that they had to go in a second time for it. The only two things which we can consider are the two which we have already mentioned. If they find a spreading mesenteric thrombosis the case is almost certainly hopeless. If they find other adhesions they may well relieve the situation and allow her to get well.

DR. YOUNG'S PRE-OPERATIVE DIAGNOSIS

Mesenteric thrombosis?
Adhesions?

PRE-OPERATIVE DIAGNOSIS

Strangulated ventral hernia.

OPERATION JANUARY 19

Local novocain-ethylene. On opening the abdomen there was a moderate amount of clear fluid. Several loops of distended bowel presented. There was no omentum to be seen. The stomach was somewhat distended. A catheter was sutured into a loop of distended bowel by the Witzel method and the bowel was fastened to the anterior abdominal wall. A very short exploration was made under ethylene. No definite source of obstruction was found. No loop of gangrenous bowel could be seen or felt.

FURTHER DISCUSSION

The report of the second operation is rather unsatisfactory. She was obviously in poor condition, so that a lengthy exploration could not be undertaken, and they did what they thought was the surest thing to help with the least damage.

Although ethylene is an anesthesia which carries very little shock it is not very satisfactory for an abdominal exploration because it does not give very good relaxation. It is a question in my mind whether there would not be less damage with the complete relaxation of ether, which would result in less trauma in working in the abdomen. It is also possible that something might have been found that would be missed with ethylene anesthesia. However, they apparently did rule out mesenteric thrombosis as the cause of trouble.

The examination by the medical man suggests some infection in the lungs.

The blood chemistry is essentially normal, the non-protein nitrogen and blood sugar being a little higher than they should be, but not much.

The story from this point suggests that they really did relieve the abdominal damage, but that in the process the lungs had received enough infection so that that is really what carried her off.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Strangulated ventral hernia.
Bronchopneumonia.
Jejunal fistula.
Repair of strangulated ventral hernia.
Jejunostomy.

DR. EDWARD L. YOUNG'S DIAGNOSIS

Strangulated ventral hernia.
Pneumonia.

ANATOMICAL DIAGNOSIS

1. *Primary fatal lesion*

(Strangulated ventral hernia.)
Purulent urethritis, cystitis, ureteritis, and double pyonephrosis.

2. *Secondary or terminal lesions*

Purulent bronchitis.
Focal pneumonia.
Soft spleen.
Acute cholecystitis.
Arteriosclerosis.
Small dissecting aneurysm of the arch of the aorta.
Slight hypertrophy and dilatation of the heart.
Area of necrosis in the ileum.
Decubitus.

3. *Historical landmarks*

Chronic pleuritis.
Chronic peritonitis.
Operation wounds.
Extra lobe of the liver.

DR. RICHARDSON: The head was not examined.

Trunk: In the anterior abdominal wall a little to the left of the umbilicus there was an open wound ten centimeters long. A short distance above the pubis there was a long linear scar which extended across the wall from side to side. Beneath this scar in the subcutaneous tissues there was a long trough-like cavity which contained a moderate amount of thin brownish-red opaque fluid. There was no definite purulent material.

At a point about sixty centimeters from the lower end of the duodenum the wall of the jejunum presented a row of sutures and a small surgical opening for a tube. This portion of the jejunum was adherent to the wall in the region of the operation wound mentioned. At another point about one hundred and sixty centimeters above the ileocecal valve a strip of ileum about twelve centimeters long showed some purplish-black discoloration of its serosa. There were some old adhesions in this region. The mucosa and the muscularis in places showed some areas of necrosis which extended to the serosa in instances. The intestinal wall in this situation broke in places on manipulation. Below this the intestine was negative. There were in places old adhesions between the coils of the small intestine and the region of the operation wound. There were adhesions between the omentum and the parietal peritoneum. In the region of the lower border of the great omentum there was a broad thick tongue-like mass of omental tissue which showed more or less fibrosis. No definite acute peritonitis made out.

Pleural cavities. Right, no fluid. Left, a few cubic centimeters of thin pale cloudy fluid. There were a few old pleural adhesions on each side.

Lungs. There was well marked purulent bronchitis and the lower lobes showed frank focal pneumonia.

The heart showed slight hypertrophy but the valves and cavities and coronary arteries were negative.

Aorta. In the ascending thoracic and arch portions there was a slight amount of fibrous sclerosis, and at the lower end of the arch there was an atheromatous area two and a half centimeters by twelve millimeters. Extending from the base of this area there was a short dissecting aneurysm the outer wall of which was intact. The remaining portions of the aorta showed more or less fibrous sclerosis with scattered fibrocalcareous areas. The great branches showed scattered areas of fibrosis and a few small fibrocalcareous areas.

Liver. There was a small extra lobe two and a half centimeters by thirteen millimeters by ten millimeters in the region of the inferior surface of the left lobe midway.

The gall-bladder contained a small amount of purulent semifluid material, and the mucosa in places was dirty purplish-red and coated with fibrinous material. There was no definite distension. The bile ducts were slightly dilated and contained a small amount of purulent semifluid material evidently coming down from the bladder. There was some fatty infiltration of the pancreas.

The spleen was small and the tissue purplish-brown-red and mushy.

The genito-urinary tract presented a well marked purulent urethritis, cystitis, ureteritis and double pyonephrosis. The uterus was elongated, and from the top of it a broad firm band of adhesions extended to the anterior parietal peritoneum.

Dr. Young: As I look back over the urine report and the history it does not seem as though we had anything that would justify our recognizing the condition of the urinary tract, nor do I see that we have any right to have recognized the acute condition in the gall bladder. Other than that the facts seem to fit in very well with what we expected.

INSTRUCTION OF THE SUPREME COURT TO THE TRUSTEES OF THE ROBERT BENT BRIGHAM HOSPITAL FOR INCURABLES

This decision is the result of a bill in equity brought by the Hospital for instructions.

The court says that certain complaints fall within the functions of the Probate Court.

The trustees, under the will of Elizabeth F. Brigham, must pay over the income which they receive to the Hospital and have no further responsibilities. The correction of abuses, if any exist, is the responsibility of the Attorney General. Aliens are not included in the term "citizens" in the terms of the bequest.

Women and children may be admitted to the Hospital in such numbers as may not prevent the reception of a reasonable number of male applicants. A person does not have to be absolutely destitute to be a proper person to be admitted to the Hospital but if friends and relatives who are willing and able will provide for the comfort of a patient, such patients shall not be admitted.

A person shall not be barred from the Hospital if those persons who are bound to care for him refuse to do so. The court also says that the Hospital is to take chronic as well as incurable cases.

This will remove some of the causes for misunderstandings which have been vexatious for a considerable time.

THE STANDING OF ATHLETES IN COLLEGE

The University of Wisconsin reports that athletes in the under-graduate body average higher in their class room standing than non athletes. The general average of students in the University is 73.4. The athletes showed an average of 74.5.

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THE KOCH CANCER FOUNDATION—A WARNING

EVERY member of the Massachusetts Medical Society has now received, presumably, three numbers of the *Bulletin of the Koch Cancer Foundation*, the house organ of what is apparently a commercial organization. This bulletin, it is claimed, goes to every physician in the United States and Canada. In appearance and style it resembles a bona fide medical journal although the list of contributors seems to be largely a matter of repetition from month to month. The *Bulletin*, in technical language, upholds the theory that all accepted methods of cancer therapy are antiquated and should be obsolete, and that they should be entirely replaced by the Koch synthetic cancer antitoxin, which is not merely a palliative but an actual cure for cancer. The *Bulletin* also regularly finds occasion for slurring remarks concerning the American Medical Association and the American Society for the Control of Cancer.

The arguments of the proponents of Koch's cancer antitoxin are extremely convincing and may well mislead many readers of this bulletin into accepting them at their face value, were it not for certain facts that have been set forth in the *Journal of the American Medical Association* (May 8, 1926).

First and foremost is the fact that, although "Koch's Synthetic Anti-toxin" is purported to have been developed in 1919, its composition still remains a secret—certainly a suspicious circumstance as viewed in the light of ethical, scientific medicine. Koch's "cure" has, moreover, been investigated by three different committees appointed by the Wayne County Medical Society, and each report has been unfavorable, the last closing with the statement:

"In no instance have we found a case where the diagnosis of cancer was absolutely established and where no other form of treatment has been used in which a cure or any decided benefit had ever been obtained."

The *Journal of the A. M. A.* has also collected data on its own account concerning individuals who had been treated with this antitoxin, and these reports are unanimously condemnatory.

Who is Dr. Koch? We may learn from the *Journal of the American Medical Association* that William F. Koch was graduated in medicine by the Detroit College of Medicine and Surgery in 1918, having previously been an assistant in physiology and an instructor in histology in the University of Michigan Medical School. He also had been professor of physiology in the Detroit College of Medicine and Surgery.

A man, however, is known by the company he keeps, and the individuals who organized the "Koch Cancer Foundation" in February, 1926, are the following:

Frederick Dugdale, M.D., of Boston, a graduate of the Baltimore Medical College, a disciple of Abrams, previously advertising himself as a "Specialist in Rheumatism, Cancer, Chronic Blood and Nervous Diseases;"

A. W. Hoyt, M.D., of New York, a graduate of the Medical Department of the University of the City of New York, and a former disciple of Abrams. Recently he has also been interested in the "Auto-Hemic Serum" of L. D. Rogers;

W. Wallace Fritz, M.D., of Philadelphia, a graduate of the Medico-Chirurgical College of Philadelphia, who occasionally places after his name the letters M.D., D.D.S., N.D., D.O., D.C., indicating that he is a physician, a dentist, a naprapath, an osteopath and a chiropractor. He has been "dean" of the "American College of Neuropathy" and president of the "National Association of Drugless Physicians;"

L. L. Dill. M.D., of Logansport, Indiana, a graduate of the University of Michigan Homeopathic Medical School, director of the "Logansport Cancer Institute;"

C. Everett Field, M.D., of New York, a graduate of the Medical Department of the University of the City of New York, one-time director of the "Radium Institute of New York:"

Elnora C. Folkman, M.D., of New York, a graduate of the George Washington University Medical School, a member of the "Society of Physical Therapeutists," and a lessee of one of Abrams' "Oscilloclasts;"

Albert Lynch, M.D., of Fairbury, Nebraska, a graduate of the University of Michigan Medical School, early connected with the exploitation of the Koch "cure."

The price of the treatment from the Foundation is said to be $110 to both stockholders and members, who are obliged to charge their patients $300 for the first, and $200 for any subsequent treatments. The difference, according to the *A. M. A. Journal*, is presumably to cover the risk assumed by the followers of Koch in injecting a secret mixture into the cancer patient.

We do not know whether or not Dr. Koch is a misguided enthusiast who has deluded himself into believing that he has discovered a cure for cancer. Certainly the type of associates he has gathered about him speak against his honesty of purpose, and in any event his methods and those of his associates must debar any ethical physicians from having dealings with him.

THE DESCENT OF MAN

The vague disorder that has been stirring into ill-considered and perhaps unaccustomed action the brains of many legislators seems to be spreading through certain sections of the South, and is perhaps approaching epidemic magnitude. There appears to be a general inclination on the part of the less urban solons of the country to become village Hampdens who with dauntless breast the petty tyrants of their fields withstand. Perhaps they are broadcasting for the services of an elegist to immortalize them, as once the weary, plodding plowman was immortalized.

Louisiana, we learn from *Science*, has apparently become the latest victim of this virus, whose ravages once culminated in the overpoweringly dignified persecution of a school teacher in Tennessee, who was so many times, in the course of a few summer days, oratorically crucified by the verbose redundancy of religious fanaticism.

To make a short matter long, the lower house of the Louisiana legislature has passed a bill to prohibit the teaching in state supported schools of the theory that man descended from a lower order of animal. Members of the faculty of the Louisiana State University have presented a protest, signed by 143 of their number, to the educational committees of the legislature, although it is presumably a foregone conclusion that the professors, with some knowledge of the subject, will not be listened to for that reason.

The rural legislators do not believe in the descent of man. Alas, that they should furnish such conclusive evidence in favor of the latest evolutionary theory, that man is but a stage between the monkey and the ass.

PATHOLOGY AND MENTAL HYGIENE

Dr. James V. May, Superintendent of the Boston State Hospital, points out in the *Monthly Bulletin of the Massachusetts Society for Mental Hygiene,* that no plan of research directed towards the correlation of function with special mechanism of the nervous system will be productive of results unless the active coöperation of the pathological laboratory is considered. The importance of all constructive work along the lines of mental health can best be realized when we appreciate the fact that over forty per cent. of the total hospital capacity of the country is given over to the care of mental cases, and that nearly fifty per cent. of the hospital beds of Massachusetts are to be found in the institutions represented by the Departments of Mental Diseases.

Furthermore, an analysis of over seventy thousand first admissions to forty-eight hospitals in sixteen states shows that over thirty-six per cent. of these cases trace their origin to a definite physical basis—traumatism, senility, arteriosclerosis, general paralysis and other syphilitic processes, various brain and nervous diseases, somatic or physical disorders, epilepsy and mental deficiency. It now seems to be demonstrated that disturbances of the endocrine glands are factors of great importance, and it is thought by many that dementia praecox will eventually be shown to be invariably of organic rather than functional origin.

Our care and treatment of mental cases is becoming progressively more humane, more enlightened, and more hopeful. These unfortunates are now sent to hospitals for study and treatment, not to asylums for confinement. A greater percentage is annually being discharged as cured. Insanity, an affliction to be whispered of with bated breath, has become mental disease, a condition to be cared for intelligently, to be treated scientifically, and often to be cured. A former hopeless attitude toward the problem is being replaced by an attitude that recognizes the definite possibilities of prevention and of cure, and this change in attitude has been brought about largely through the accomplishments of the laboratory.

PASTEURIZATION DEFINED

In 1925 the Public Health Service issued Bulletin 147 in which a temperature of 142°F for thirty minutes was prescribed as the minimum requirement for the pasteurization of milk. This, it was claimed, provided an adequate margin of safety of 4°F over the thermal death point of the tubercle bacillus, which was stated to be 138°F. The experiments on which these requirements were based were made possible by the Borden Farm Products Company. The *American Journal of Public Health* took exception to this lowering of the accepted standard of pasteurization, and advised public health officials to await the report of the Committee on Milk Supply of the Public Health Association before changing their regulations.

The Surgeon General of the Public Health Service acknowledged some of the errors in Bulletin 147, but determined not to make any correction of them. The *Journal of Public Health* for July, 1926, after reviewing the situation, now announces that the Conference of State and Provincial Health Authorities of North America, with the Public Health Service, has recently adopted as a minimum standard a temperature of 145°F maintained for thirty minutes.

Although the JOURNAL has not entered into a discussion of the technique and standards of pasteurization, believing that these should be prescribed by the proper authorities, it has consistently maintained that universal effective pasteurization of milk is, at the present time, the only way in which a milk supply can be made entirely safe. We believe that milk, no matter how carefully it has been produced, will always be a possible source of danger to the public unless it has been pasteurized or sterilized before its ultimate consumption. Health authorities agree with us in this statement, and those communities that are working towards the effective pasteurization of their entire milk supplies are taking steps in the right direction.

In communities such as Boston, with its excellent Department of Health, the amount of milk sold in the raw state is almost negligible, and that which is allowed comes from accredited sources such as certified farms. Even despite the careful supervision of this small quantity of raw milk, however, we believe that the best interests of communities will eventually demand that it all be pasteurized. Certified milk has its dangers that have not yet been eradicated. Tuberculous cows have been found to crop out in herds between tests; milkers may innocently continue at their work during the incubation stages of scarlet fever, diphtheria, or septic sore throat. There is no effective means of controlling these loopholes for infection except by pasteurization.

Small communities, drawing their milk supplies from numerous small and poorly supervised herds, drink much of their milk raw, and not subject to the safeguarding provisions which the larger cities are able to adopt. Community pasteurizing plants must be the solution in these districts, and the sooner the fact is appreciated, the safer will be the general health of the state.

THIS WEEK'S ISSUE

CONTAINS articles by the following named authors:

BLAISDELL, J. HARPER, A.B., M.D. Harvard Medical School 1911; Instructor in Dermatology, Harvard Medical School; Assistant Dermatologist, Massachusetts General Hospital; Consulting Dermatologist, General Gale Hospital. Haverhill, Mass. His subject is "Is Ichthyol Useless?" page 155. Address: 45 Bay State Rd., Boston.

CORIAT, ISADOR H., M.D. Tufts College Medical School 1900; Assistant Physician, Worcester State Hospital 1900 to 1905; Formerly First Assistant Visiting Physician for Diseases of the Nervous System, Boston City Hospital; Ex-President of the American Psycho-Analytic Association; Member of the International Psycho-Analytic Association. His subject is "Recent Conceptions of the So-Called 'Traumatic Neuroses';" page 160. Address: 416 Marlborough St., Boston.

EVELETH, F. S., M.D. Boston University 1899; Roentgenologist, Margaret Pillsbury Hospital and New Hampshire Memorial Hospital; Member of American Roentgen Ray Society and New England Roentgen Ray Society. His subject is "Cholecystography," page 165. Address: 12 Court St., Concord, N. H.

LEWIS, KENNETH M., B.S. Columbia College; M.D. College of Physicians and Surgeons, Columbia University, 1919; Adjunct Assistant Attending Surgeon, and Attending Surgeon, Out-Patient Department, Bellevue Hospital, N. Y. City; Member, Medical Society of The State of New York and Medical Society of the County of New York. His subject is "Trypanosomiasis; Relative Frequency in the United States; Tryparsamide Therapy in Refractory Cases," page 167. Address: 59 E. 54th St., New York City.

HUBER, EDWARD G., A.B.; M.D.; Dr. P.H.; Major in Medical Corps, U. S. A. His article on "The Control of Communicable Diseases Prevalent in Massachusetts with A Study of Mortality Due to Them During the Past Seventy-Five Years," is continued on page 169. Address: War Department, Washington, D. C.

MISCELLANY

NATIONAL BOARD ELECTS OFFICERS AND MEMBERS

The *Bulletin of the National Board of Medical Examiners* reports that at the annual meeting in Washington, D. C., on May 8, the following officers were elected: President, Admiral E. R. Stitt, Surgeon-General, U. S. Navy; Secretary, Dr. J. S. Rodman; Director and Treasurer, Everett S. Elwood. This meeting marked the retirement of the former president, Dr. H. D. Arnold, who was a charter member of the Board at the time of its organization in 1915, and who has taken a very active and valuable part in the work of the Board continuously since that time. Dr. Arnold's retirement was occasioned by the expiration of his second term, in accordance with the regulation that the National Board members are not eligible for more than one reëlection.

Two members had been previously elected by the Executive Committee to fill vacancies, and their elections were confirmed at the annual meeting. These were the election of Dr. A. S. Begg, Dean of the Boston University School of Medicine, and Dr. J. B. DeLee, Professor of Obstetrics, Northwestern University Medical School.

Two other members were elected to fill vacancies, viz., Dr. Otto Folin, Professor of Biochemistry, Harvard University Medical School, and Dr. Louis B. Wilson, Director, The Mayo Foundation.

OFFICERS AND COMMITTEES ELECTED AT THE ANNUAL MEETING OF THE MAINE MEDICAL ASSOCIATION, JUNE 10-12, 1926

President—L. P. Gerrish, Lisbon Falls.
President-elect—N. M. Marshall, Portland.
1st Vice President—T. S. Dickinson, Houlton.
2nd Vice President—W. J. Renwick, Auburn.
Secretary and Treas.—B. L. Bryant, Bangor.

BOARD OF COUNCILORS

First District—S. P. Warren, Portland; term expires 1927.

Second District—John Sturgis, Auburn; term expires 1927.

Third District—Neil A. Fogg, Rockland; term expires 1929.

Fourth District—George E. Young, Skowhegan; term expires 1929.

Fifth District—C. C. Knowlton, Ellsworth; term expires 1928.

Sixth District—A. K. P. Smith, Bangor; term expires 1928.

COMMITTEES

Scientific Committee—E. E. Holt, Jr., Portland; C. C. Morrison, Jr., Bar Harbor; E. H. Risley, Waterville.

Legislative Committee—L. P. Gerrish, Lisbon Falls; J. D. Phillips, S. W. Harbor; F. W. Mitchell, Houlton.

Committee on Venereal Diseases and Their Prevention—G. H. Coombs, Augusta; H. W. Stanwood, Rumford; H. J. Hunt, Bangor.

Committee on State Hospitals—D. M. Stewart, So. Paris; L. G. Bunker, Waterville.

Cancer Committee—N. M. Marshall, Portland; H. E. Thompson, Bangor; Mortimer Warren, Portland.

Committee on Health in Schools—C. F. Kendall, Augusta; H. D. McNeil, Bangor; J. A. Spalding, Portland; T. A. Foster, Portland; L. J. Dumont, Lewiston.

Committee on Hospitals—R. W. Wakefield, Bar Harbor; C. M. Robinson, Portland; C. H. Young, Portland.

Committee on Medical Defense—E. G. Abbott, Portland; B. L. Bryant, Bangor; W. G. Chamberlain, Ft. Fairfield; E. V. Call, Lewiston; Geo. E. Young, Skowhegan.

Committee on Public Relations—F. W. Mann, Houlton; E. D. Merrill, Dover-Foxcroft; Richard Small, Portland; C. F. Kendall, Augusta; B. L. Bryant, Bangor; F. Y. Gilbert, Portland.

Necrologist—J. A. Spalding, Portland.

Delegates to A. M. A.—B. L. Bryant, Bangor, Alternate, W. E. Webber, Lewiston; F. Y. Gilbert, Portland, Alternate, L. P. Gerrish, Lisbon Falls.

Delegate to National Council—T. J. Burrage, Portland.

Delegates to State Societies—New Hampshire, T. A. Foster, Portland; Vermont, Geo. E. Young, Skowhegan; Massachusetts, A. W. Fellows, Bangor; Rhode Island, William Holt, Portland; Connecticut, Earl Merrill, Bangor.

Visitors to State Sanatoria—Carl O'Brien, Bangor; F. J. Welch, Portland.

RESOLUTIONS OF LOUISIANA STATE MEDICAL SOCIETY ADOPTED BY THE HOUSE OF DELEGATES AT THE ANNUAL MEETING HELD APRIL 17, 1926

Whereas, The American Public Health Association at its Annual Meeting in St. Louis, in October, 1925, listened to an address by one of its members, favoring a new doctor in each community where a Health Officer is needed, to be known as a Doctor of Public Health, and

Whereas, Several institutions of learning have introduced courses in Public Health whereby a layman as well as a physician, may be instructed and in a comparatively short time qualify as a Doctor of Public Health, (D. P. H.) and be allowed to advise, qualify and practice preventive medicine, and

Whereas, The Louisiana State Medical Society believes that all Health Officials should first be physicians, (M.D.) who have the proper knowledge of the sciences concerned in Public Health, and that such knowledge can not be gained by any layman in two or three years, and

Whereas, Such an arrangement of a layman being a Health Official, places a double expense on the community, since it is necessary for the community to then procure the service of an M.D. in addition to a layman, and

Whereas, The State confers on an M.D. the right to practice medicine and surgery in all of its branches, while the special licensing of a D. P. H. would be special legislation tending to take from an M.D. that right,

Therefore Be It Resolved, That the Louisiana State Medical Society believes all positions of trust pertaining to Public Health in any community should be held by physicians, (M.D.) and not by laymen holding D. P. H. licenses, and

Be It Further Resolved, That the Louisiana State Medical Society views with displeasure any move on the part of the American Public Health Association, which may express a desire to replace physicians as Health Officials by laymen with D. P. H. licenses, and

Be It Further Resolved, That a copy of this resolution be sent to the American Public Health Association; to all those institutions of learning where courses in Public Health are given with a view to conferring a D. P. H. Degree; to all Medical Colleges; to all State Boards of Health; and to every State Medical Society with a request that their component County Societies be made acquainted with the proposed activities of a Public Health Association, whose President is a layman.

BOSTON MEDICAL LIBRARY

RECENT ACCESSIONS

Anders, J. M., and Boston, L. N. A text-book of medical diagnosis. 3 ed. Phila., Saunders (c1925).
L'Art Ancien S. A. A catalogue of early herbals, mostly from the well-known library of Karl Becher, Karlsbad. Lugano, 1925.
Brown, L., and Sampson, H. L. Intestinal tuberculosis; its importance, diagnosis and treatment. Phila., Lea, 1926.
Browning, W. Medical heredity. Distinguished children of physicians (United States to 1910). Balt., 1925.
Cabot, R. C. Facts on the heart. Phila., Saunders, 1926.
Campbell, D. Arabian medicine and its influence on the middle ages. 2 v. Lond., Paul, 1926.
Codman, E. A. Bone sarcoma. N. Y., Hoeber, 1925.
Copher, G. H. Methods in surgery used in the surgical divisions of Barnes Hospital, St. Louis Children's Hospital and Washington University Dispensary. St. L., Mosby, 1925.
Crossen, H. S. Operative gynecology. 3 ed. St. L., Mosby, 1925.
Deguéret, E. Histoire médicale du Grand Roi. Par., 1924.
Drewitt, F. G. D. The romance of the apothecaries garden at Chelsea. 2 ed. Lond., Chapman, 1924.
Duke, W. W. Allergy. asthma, hay fever, urticaria and allied manifestations of reaction. St. L., Mosby, 1925.
Dunlap, K. Old and new viewpoints in psychology. St. L., Mosby, 1925.
Evans, C. L. Recent advances in physiology. Lond., Churchill, 1925.
Farquhar, H. Royal charities. 2 ser. The Maundy. Lond., Harrison, 1925.
Freud, S. Collected papers. Authorized translation under the supervision of Joan Riviere. V. 4. Lond., 1925.
Graham, E. A. Some fundamental considerations in the treatment of empyema thoracis. St. L., Mosby, 1925.
Hollos, S., and Ferenczi, S. Psychoanalysis and the psychic disorder of general paresis. Authorized English by G. M. Barnes and G. Keil. N. Y., Nerv. and Ment. Dis. Publ. Co., 1925.
Janet, P. Psychological healing. Translated from the French by Eden and Cedar Paul. 2 v. N. Y., Macmillan, 1925.
Jayne, W. A. The healing gods of ancient civilizations. New Haven, Univ. Pr., 1925.
Johnson, C. B. Sixty years in medical harness, or the story of a long medical life, 1865-1925. N. Y., 1926.
Kopetzky, S. J. Otologic surgery. N. Y., Hoeber, 1925.
Levene, P. A. Hexosamines and mucoproteins. Lond., Longmans, 1925.
Lilienthal, H. Thoracic surgery. 2 v. Phila., Saunders, 1925.
McClendon, J. F., and Medes, G. Physical chemistry in biology and medicine. Phila., Saunders, 1925.
Matthes, M. Textbook of differential diagnosis of internal medicine. Authorized translation of the fourth German edition, with extensive additions by I. W. Held and M. H. Gross. Phila., Blakiston (c1925).
Moorehead, F. B., and Dewey, K. W. Pathology of the mouth. Phila., Saunders, 1925.
Morse, W. Applied biochemistry. Phila., Saunders (c1925).
Palfrey, F. W. The art of medical treatment, with reference both to the patient and to his friends. Phila., Saunders, 1925.
Parkinson, R. H. Eye, ear, nose and throat manual for nurses. St. L., Mosby, 1925.
Pottenger, F. M. Symptoms of visceral disease. 3 ed. St. L., Mosby, 1925.
Rockefeller Foundation. Division of medical education. Methods and problems of medical education. 3 ser. N. Y., 1925.
Ruhräh, J. William Cadogan (his essay on gout). N. Y., Hoeber, 1925.
Sheehan, J. E. Plastic surgery of the nose. N. Y., Hoeber, 1925.
Smith, A. T. Arthur Noel Smith. Concord, Rumford Pr., 1925.
South African Institute for Medical Research. Annual report for the year 1924. Johannesburg, 1925.
Spaeth, E. B. Newer methods of ophthalmic plastic surgery. Phila., Blakiston (c1925).
Spielmann, M. H. The iconography of Andreas Vesalius, 1514-1564. Lond., Bale, 1925.
Stewart, H. E. Physiotherapy; theory and clinical application. N. Y., Hoeber, 1925.
Stewart, W. H. Skull fractures Roentgenologically considered. N. Y., Hoeber, 1925.
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Taylor, E. W. Psychotherapy. Mental elements in the treatment of disease. Camb., 1926.
Thompson, L., and Downs, W. S. Who's who in American medicine, 1925. N. Y., 1925.
White, W. A. Essays in psychopathology. N. Y., 1925.
Winslow, C. E. A., and Williamson, P. B. The laws of health and how to teach them. N. Y., Merrill (c1926).

Wolff, E. Anatomy for artists. N. Y., Macmillan, 1926.

Young, H. H., and Davis, D. M. Young's practice of urology. Based on a study of 12,500 cases. 2 v. Phila., Saunders (c1926).

RECENT DEATHS

MEYER—Dr. Edward James Meyer, a Fellow of the Massachusetts Medical Society, died at his home in Somerville of myocarditis, April 29, 1926, at the age of 56.

He was a graduate of Dalhousie University Faculty of Medicine, Halifax, N. S., in 1893, joined the State medical society in 1914, and served in the World War.

GIBBS—Dr. Locero Jackson Gibbs, a retired Fellow of the Massachusetts Medical Society, died at his home in Chicopee Falls, July 12, 1926, aged 81.

Dr. Gibbs was a graduate of Dartmouth Medical School in the class of 1875, having been born and educated in Washington, Me. He served in the Eleventh Maine Volunteers from 1861 to 1862 and in the Eighth Maine Volunteers from the latter date to the close of the Civil War, when he settled in practice in Epping, N. H. He moved to Chicopee Falls in 1883 and joined the State medical society. He was a member of the United States Examining Board for Pensions after the year 1900.

SIMON—Dr. Harold Francis Simon, a Fellow of the Massachusetts Medical Society, died at his home in Winchester, July 6, 1926, at the age of 45.

He was a graduate of Boston University Medical School in 1904 and settled in New Bedford. He moved to Winchester two years later and joined the State medical society in 1917. Dr. Simon belonged to William Parkman Lodge of Masons and was a Fellow of the American Medical Association.

HEWES—Dr. Henry Fox Hewes, who made a specialty of internal medicine, died at his home in Boston, July 8, 1926, at the age of 58.

He was born in Portland, Me., August 27, 1867, was graduated at Harvard in 1890 and at Harvard Medical School in 1895, having served as house officer at the Massachusetts General Hospital, where he was later physician to out-patients. He was instructor in clinical chemistry in Harvard Medical School and consulting physician to the Massachusetts Eye and Ear Infirmary. Of late years he had given much attention to diseases of the stomach and intestines.

He is survived by his widow, who was Miss Margaret Warman of Moncton, N. B., and by a son, Henry F., Jr.

CARROLL—Dr. Thomas Francis Carroll dropped dead near his home in Lowell, July 10, 1926.

Dr. Carroll was a native of Lowell, where he was born, July 9, 1864. He was a graduate of Boston College and of Harvard Medical School in the class of 1888. That year he joined the Massachusetts Medical Society and went abroad to study, then settled in Lowell. Of late he had limited his practice to dermatology. He is survived by his widow.

OBITUARIES

DR. F. G. WHEATLEY

July 6, 1851—June 14, 1926

The lives of some cannot be appraised in their own generation because of the nature of the contribution they have made. The work they did may have been skillfully performed; no doubt may attach to the devotion with which they labored for their objectives; unselfishness, and even self sacrifice, may have characterized their every act but time alone can determine the worth and permanency of their service.

Their assets are not liquid, to employ the banker's phraseology. This could not be said of the subject of this memoir. What Dr. Wheatley did was impressed upon his own day and generation and appraised of his worth as citizen, counsellor, physician, teacher or friend might be had for the asking, of numberless individuals who are in a position to know whereof they speak. Some who receive the commendation of their peers and whose works live after them, achieve this reward because of one outstanding thing they have accomplished, to which they have devoted the whole of their lives. In all else save this single achievement their careers would have been drab mediocrity, affecting no one favorably or unfavorably. To some a book, an invention, or a discovery has epitomized a service which has been widespread in its influence, its practicability or for the purpose of clarifying a certain branch of knowledge. The value of such contributions are incalculable. It is, however, to the man with stability of character, soundness of judgment, tolerance, fixity of purpose, insight into human motives and the saving grace of humor, to whom comes the opportunity of most widely influencing one's contemporaries. To have given good advice falls to the lot of many; to have served as a stabilizer to the passions and hasty judgments of individuals or groups of individuals, comes to a certain few; but to be able to impart the qualities that make the above actions possible marks the widely influential man. This, Dr. Wheatley did, in a quiet way, for many a young person, whether student or instructor, who came under the spell of his influence; and by them his influence radiated in ever widening circles —and will continue to radiate. There is no power for good comparable to that exerted through the personal contact of an impressionable and receptive mind with that of a masterful character. The opportunity for such contacts came frequently in his life, not only among those who sought his professional advice but among those who served with him in civic work and he played his part as a citizen in every way that it was possible for him to do.

An insight into human nature, such as is rarely allotted to the common run of mankind, enabled him to be of service in forwarding many an endeavor where the right man at the right time spelled success. His tolerance, sanity and invariable good humor made easy many of the compromises that must necessarily be effected in the conduct of the affairs of men. It was my privilege to be associated with him for several years in committee work and administrative affairs. Without his steadfast adherence to plans, back of which was the sanity of his judgment, it would have often been easier to yield to the temptation to abandon the endeavor and seek another solution of the problem. As was so well pointed out by the friend whose privilege it was to utter the fitting words spoken at his funeral services, he was a man who had a vision and when once this had taken possession of him he shaped his course toward its realization with a determination which infused others with his own faith—nor was his determination mere doggedness. I have the testimony of one of his Dartmouth college classmates who has kept in close touch with him through all the years which have succeeded their graduation and he assures me that what characterized his maturer years was equally characteristic of him in his collegiate life.

His Phi Beta Kappa key testified to the scholarly ability he possessed when in college, the taste for which followed him through a life too crowded with the doing of things to permit of its indulgence. The offices of dignity and responsibility to which he was elected and by which his fellow townsmen delighted to indicate their confidence in him, spoke emphatically for those qualities of citizenship which are the backbone of our form of government. The wider electorate that sent him to both branches of the General Court was a further recognition of his sterling qualities. County and State claimed his services as Medical Examiner, Pension Commissioner and Chairman of the Board of Trustees of the School for Feeble Minded, respectively. To his wise counsel the Tufts Medical School will always be in his debt and its chair in Therapeutics will find it difficult to procure an occupant who will come so near filling it as he did.

The mention of the above activities leaves out of consideration wholly, his real life work and that for which he would doubtless wish most to be remembered viz: his ministrations to the sick and needy within the district where he practiced. The ranks of the old time general practitioner suffered a severe loss when he went, for their numbers are becoming lamentably less and Dr. Wheatley possessed, to a high degree, the qualities that endeared them to their patients.

If there are those among the rising generation of physicians who desire to know the secret of success in the practice of the healing art, not as a means of personal aggrandizement nor as a stepping stone to a "place in the sun," but as an opportunity for rendering service for the good of mankind, let them study the career of F. G. Wheatley, A.B., Dartmouth '79; M.D. '84.

CHARLES F. PAINTER.

HAROLD WILLIAMS, A.B., M.D., LL.D.

THE trustees of the Forsyth Dental Infirmary for Children desire to record their appreciation and gratitude for the services of Dr. Harold Williams and their profound sorrow at his death.

When the splendid charity of the Forsyth family made possible the foundation of an institution for the prophylaxsis and care of oral conditions in children, it was decided to form a group of trustees, whose active members were to be made up largely of professional men, chosen for their familiarity with the needs of the children and the community. Among the first selected was Dr. Williams. From his Boston Dispensary experience and his later connection with the Tufts College Dental School, he knew at first hand the field of activities which the institution was destined to cover. With keen interest and practical mind, he became one of the principal factors in planning the building and the work which it was to do. The titles of the bronze entrance doors, which symbolize the functions of the Infirmary, were the product of his mind:

> "The Mother, Giver of Life and Love;
> The Commonweal, Giver of Health and Learning."

His outstanding literary gifts led us to depend upon him for the preparation of papers in which quality was a desideratum, and the annual reports of the Infirmary bear the marks of his editing.

With the completion of the Infirmary building, he gave of himself freely to the ever new problems which appeared, problems which were unusual because of the unique character of the foundation and whose solution has marked the successful progress of the Infirmary. From the beginning the work was one of pioneering, since there were no precedents to follow, no path ready made. Always cheerful, forward looking, with vision checked by a mind finely trained, and a wide practical experience in institutional needs, his work is as much a part of the Forsyth Infirmary as the corner stone of the building.

We have lost a guide, a counsellor and a friend.

CORRESPONDENCE

WORKMEN'S COMPENSATION

Mr. Editor:

I have read with interest your comment in a recent number of the JOURNAL on "Narrow Definition of 'Unusual' under Workmen's Compensation Law." It is surely wise that the medical profession should use their influence to establish justice, but in so doing they should be sure of the ground upon which they stand.

In the early eighties it was proved that pulmonary tuberculosis was the result of infection of the lung by the tubercle bacillus. Since that time no etiologic factor has been brought to the attention of the medical profession until the courts have stated that a "crushing injury to the chest" was an etiologic factor of pulmonary tuberculosis. In a court of law such a decision is certainly open to fair criticism. Because a defendant is rich and the plaintiff is poor is no real reason why the defendant should support the plaintiff except as a matter of charity.

A somewhat similar case has recently been brought to my attention. In 1922 I saw in consultation a man who had undoubtedly pernicious anaemia; he was a worker in a printing house. He died shortly. In 1926 his widow claimed compensation from the Industrial Accident Board on the theory that the pernicious anaemia was the result of lead poisoning. There were no other signs to suggest lead poisoning. As all writers of prominence state that the etiology of pernicious anaemia is unknown the claim does not seem just.

Many years ago I saw in consultation a woman who had pernicious anaemia; she had recently been in a slight railroad accident and claimed damages. I testified that the accident could not have had any relation to the pernicious anaemia. The jury awarded her twelve thousand dollars, perhaps due to the testimony of another doctor who testified that the accident was a probable cause of the pernicious anaemia.

Our profession should be equally just to the defendant and the plaintiff.

Sincerely yours,
Henry Jackson, M.D.

LAKEVILLE SANATORIUM

The Journal has received the following communication from the Department of Public Health:

July 7, 1926.

Gentlemen:

As you know, last November this Department began to admit to the Lakeville State Sanatorium cases of non-pulmonary tuberculosis. As the remodelling of the buildings has progressed additional patients have been admitted until at present there are 74 children and 15 women. About the middle of this month it will be possible to accept some 30 men patients and by the fall this number will be doubled. There are still vacancies in the women's ward.

I would appreciate it very much if you would give publicity to this matter so that physicians having patients suitable for this treatment may avail themselves of it without delay through application to this Department.

Yours truly,
George H. Bigelow, M.D.,
Commissioner of Public Health.

MEXICO'S ADVANCED STAND AGAINST SMALLPOX

Mr. Editor:

Mexico's New Sanitary Code became effective July 1. After this date all persons residing in that country or entering it must be vaccinated, while those having a permanent residence must be vaccinated every five years.

Children must be vaccinated before they are four months of age.

Responsibility for failure to comply with this registration rests with the parent or guardian. Responsibility for vaccination of employees rests with the employers of labor.

March 1 last, exemption from previous universal vaccination requirements was granted to those third class immigrants into the United States who, although they had been in districts where smallpox prevailed in an epidemic form previous to sailing or who had been exposed to smallpox, had

(1) acquired immunity to smallpox by a previous attack of the disease;
(2) been successfully vaccinated within one year;
(3) been certified as immune by a public health officer.

If unexposed or from districts where smallpox was not present in an epidemic form they were presumably to be admitted in an unvaccinated condition.

The Province of Quebec has now less smallpox per capita than Vermont, her next neighbor; Mexico under this law, if enforced, will soon have none. Our Northern and our Southern neighbors have apparently seen the light.

Is it because we fear that we shall lose our supremacy as the most smallpox cursed country on earth that our health service sees fit to modify instructions to its officers, feeling that this is the time to admit more unvaccinated adults and children than has previously been the case?

Samuel B. Woodward.

CONNECTICUT DEPARTMENT OF HEALTH

Morbidity Report for the Week Ending
July 3, 1926

Diphtheria	7	Cerebrospinal meningitis	1
Last week	13	Chickenpox	35
Diphtheria bacilli carriers	1	German measles	12
Whooping cough	17	Influenza	1
Last week	33	Malaria	1
Typhoid fever	4	Mumps	5
Last week	1	Pneumonia, lobar	16
Measles	153	Tuberculosis, pulmonary	25
Last week	244	Tuberculosis, other forms	1
Scarlet fever	46	Gonorrhea	9
Last week	49	Syphilis	5
Bronchopneumonia	22		

MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH

Diseases Reported for the Weeks Ending
July 3 and 10, 1926

	Weeks ending	
	July 3	July 10
Anterior poliomyelitis	1	2
Chickenpox	101	113
Diphtheria	47	45
Dog-bite	2	8
Encephalitis lethargica	3	2
Epidemic cerebrospinal meningitis	3	1
German measles	89	86
Gonorrhea	78	28
Influenza	2	3
Measles	417	274
Mumps	97	53
Ophthalmia neonatorum	25	40
Pneumonia, lobar	56	40
Scarlet fever	241	187
Septic sore throat	1	4
Suppurative conjunctivitis	10	8
Syphilis	32	12
Tetanus	1	2
Trachoma	0	1
Trichinosis	1	0
Tuberculosis, pulmonary	146	98
Tuberculosis, other forms	11	19
Tuberculosis, hilum	9	10
Typhoid fever	3	8
Whooping cough	126	139

Resume of Communicable Diseases
June, 1926
GENERAL PREVALENCE

The only common communicable diseases which showed an increase over last month were chickenpox and diphtheria.

	June, 1926	May, 1926	June, 1925
Chickenpox	708	484	. 601
Diphtheria	276	205	357

RARE DISEASES

Anterior poliomyelitis was reported from Boston. 2; Groveland, 1; Worcester, 2; total, 5.

Dog-bite requiring anti-rabic treatment was reported from Boston, 6; Cambridge, 1; Chelmsford, 1; Danvers, 1; Everett, 2; Great Barrington, 1; Holliston, 1; Holyoke, 3; Lowell, 10; Malden, 4; Melrose, 1; Peabody, 4; Revere, 5; Springfield, 1; Westfield, 1; total, 42.

Encephalitis lethargica was reported from Boston, 5; Fall River, 1; Melrose, 1; Northampton, 3; Somerville, 1; total. 11.

Epidemic cerebrospinal meningitis was reported from Boston, 3; Easthampton, 1; Chelsea, 1; Holyoke, 1; Medford, 1; Peabody, 1; Worcester, 1; total. 9.

Malaria was reported from Newton, 2.

Pellagra was reported from Cambridge, 1; Northampton, 1; total, 2.

Septic sore throat was reported from Boston, 4; Cambridge, 1; Marlboro, 1; total, 6.

Tetanus was reported from Boston, 1; Somerville. 1; total, 2.

Trachoma was reported from Boston, 1; Cambridge. 2; Lowell, 1; total, 4.

Trichinosis was reported from Boston, 1; Cambridge, 2; total, 3.

DISTRIBUTION

All Communicable Diseases

	June, 1926	June. 1925
Total cases (all causes)	8,832	8,070
Case rate per 100,000 population	209.4	194.1

Certain Prevalent Diseases

Diphtheria	June, 1926	June. 1925
Total cases	276	357
Case rate per 100,000 population	6.5	8.6

Cases in cities and towns that have noticeably exceeded their median endemic indexes*:

Great Barrington	24

Measles	June, 1926	June, 1925
Total cases	2,724	3,094
Case rate per 100,000 population	64.6	74.4

Cases in cities and towns that have noticeably exceeded their median endemic indexes*:

Wareham	7	Hamilton	25
Taunton	19	Revere	23
New Bedford	160	Winthrop	27
Middleboro	98	Belmont	21
Fairhaven	38	Concord	27
Dartmouth	37	Lexington	43
Acushnet	5	Warren	18
Braintree	22	Webster	49
Canton	24	Chicopee	19
Framingham	47	Easthampton	19
Needham	18	Holyoke	69
Newton	81	Ludlow	36
North Attleboro	150	Northampton	45
Walpole	31	South Hadley	72
Wellesley	33	Ware	29
Chelsea	52	Stockbridge	67
Danvers	22		

Scarlet Fever	June, 1926	June, 1925
Total cases	927	563
Case rate per 100,000 population	21.9	13.5

Cases in cities and towns that have noticeably exceeded their median endemic indexes*:

New Bedford	32	Lowell	37
Norwood	10	Medford	23
Revere	19	Somerville	55
Chelsea	17	Westford	7
Lynn	57		

Tuberculosis, Pulmonary	June, 1926	June, 1925
Total cases	522	490
Case rate per 100,000 population	12.4	11.8

Tuberculosis, Other Forms	June, 1926	June, 1925
Total cases	92	83
Case rate per 100,000 population	2.2	1.9

Typhoid Fever	June, 1926	June, 1925
Total cases	35	26
Case rate per 100,000 population	.8	.6

Whooping Cough	June, 1926	June, 1925
Total cases	776	522
Case rate per 100,000 population	18.5	12.6

Cases in cities and towns that have noticeably exceeded their median endemic indexes*:

Middleboro	8	West Bridgewater	8
Wrentham	16	Medford	19
Boston	225	Ludlow	7
Cambridge	63		

*The median endemic index is obtained by arranging in arithmetical sequence the monthly totals of reported cases for the past five years and selecting the middle figure.

REPORTS AND NOTICES OF MEETINGS

THE SUMMER MEETING OF THE MIDDLESEX NORTH MEDICAL SOCIETY

The Middlesex North Medical Society will have its summer meeting on Wednesday, August 4, 1926, at the Vesper Country Club. A golf tournament has been arranged by Dr. Alling for the afternoon, and supper will be served at 6 o'clock, followed by the meeting. The speaker of the evening will be Dr. Paul White.

T. A. Stamas, *Secretary.*

MASSACHUSETTS HOMEOPATHIC HOSPITAL

The regular monthly meeting of the Staff of the Massachusetts Homeopathic Hospital was held in the Evans Memorial on Friday, June 25, 1926, at 8 P. M.

PROGRAMME

(1) Analysis of Service for the month of May.
(2) Necropsy Report for the month of May.

(3) "**Uses** of Insulin in Non-Diabetic Conditions," Sidney M. Simons, M.D.

(4) "Public Health Activities Against Tropical Diseases." (Illustrated by Motion Pictures.) P. N. Oritz, M.D., Commissioner of Health, San Juan, P.R.

(5) Remarks concerning the Year's Service, H. M. Pollock, M.D.

(6) Question Box.

The regular monthly meeting of the House Officers was held July 2, 1926, in the Evans Memorial. Dr. H. M. Pollock discussed the book, "Rules and Suggestions for Internes." Miss Dieter, Superintendent of the training school, spoke a word of welcome.

BOOK REVIEWS

I Believe in God and in Evolution. By WILLIAM W. KEEN. pp. 109. cap 8°. 4th edition revised. 6th impression; eleventh thousand. J. B. Lippincott Co., Phila. & London, 1925.

Dr. Keen's well-known book appears as a new impression largely because of an error in a previous edition. A photograph of a patient with a tail published in a recent issue was found later to be a fake. The sale of the book was immediately stopped and the photograph removed (*Science*, June 11th, 1926).

This book sums up important arguments for the theory of evolution, largely based on the evidence furnished by the anatomical similarity between animals and man. Dr. Keen calls especial attention to the similar convolutional pattern of the brain, the identical skeletal relations and the similarity in the heart, ductless glands, and sympathetic system in man and beast. He also lays stress upon the cellular origin of life and on the evidence found by a study of embryonic deformities. This little book has been tremendously popular and deserves the place it has gained for itself. It is a book that can be thoroughly relied upon by every physician and can be safely put in the hands of any intelligent non-biassed layman who is interested in the subject. It has been strongly endorsed throughout the world by physicians, scientists and ministers.

Collected Papers by the Staff of the Henry Ford Hospital. (First series, 1915-1925). pp. 634. 8°. P. B. Hoeber, New York, 1926.

The Henry Ford Hospital in Detroit was first organized just before the War. During the War, it was turned over to the United States Army. Later it was greatly enlarged and now covers a number of acres of ground with facilities for about 400 patients. It was designed as a general hospital for the city. Provisions were made from the start for research work and the present volume testifies to the amount of work done in the first ten years of the hospital's existence. The volume contains 43 papers on a large variety of subjects from the various departments of the hospital. It is impossible to review these papers in any detail, but many of them have appeared in the American medical journals, and the book therefore serves rather as a memorial to the hospital than as an example of unpublished work. Some doubt might be cast upon the value of collecting papers from one institution on such a wide variety of subjects as are to be found in this volume, but at least the careful index at the end is helpful in orientating a reader in finding any particular contribution. The volume is mainly a record of the work of the hospital,—of the present and former members of the staff and of the departments of which they have charge. In the appendix there are a number of interesting contributions on mechanical devices used at the hospital and a brief description of the physical plant by the Superintendent. Dr. Frank J. Sladen, Physician-in-Chief, writes a foreword in which he upholds the value of medical research and the advantage of group investigation. The book is superbly gotten up and contains 151 illustrations and 42 charts.

Simplified Nursing. By FLORENCE DAKIN, R.N., Inspector of Schools of Nursing, State of New Jersey. Octavo, 497 pages. 77 illustrations. Price $3.00. Published by J. B. Lippincott Company.

This book, written for the home nurse, the practical nurse and the trained attendant, seems admirably suited to the purpose for which it is intended. It is divided into three long chapters each separated into lessons which give step by step in clear, simple and technically correct form the methods of nursing procedure that may be easily, safely and intelligently carried out in the home. Chapter One outlines the routine work such as the general care of the patient and sick room, disinfection and sterilization, preparation of nourishment, etc. Chapter Two deals with general nursing methods of curative baths and packs; temperature, pulse and respiration; the most important symptoms and what they may indicate; charting and reporting; counter-irritants; hot and cold applications; irrigations, enemata, vaginal douches; administration of medicine, and division of drugs. The third chapter describes special nursing methods—simple disorders, surgical technic, isolation, fumigation, quarantine, common communicable diseases, bandaging, emergencies, poisons and antidotes. Preceding each lesson in Chapters Two and Three is a brief discussion on the anatomy and physiology or the bacteriology relative to the specific lesson. A supplementary reading list, index and glossary are appended.